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Minding the Verge: Moderating Webcasts+Chat in a Multi-Section Online Undergraduate Course

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Minding the Verge: Moderating Webcasts+Chat in a Multi-Section Online Undergraduate Course

by

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Dedication

This work is dedicated with loving remembrance to my parents,

Bobbie Ward Hamerly and Frances Eugenia Dean Hamerly,

who always said I could.

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Minding the Verge: Moderating Webcasts+Chat in a Multi-Section Online Undergraduate Course

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Coincidental increases in online instruction at institutions of higher education and in online social networking generally in the U.S. have created opportunities for research into how digital interpersonal connectivity affects online learning. This study examined interactive webcasts, or webcasts plus chat, that were part of an online undergraduate course covering Internet knowledge and skills at a large public university. Symbolic interactionism served as the theoretical framework for explicating interactive webcasts as useful online learning environments by exploring the complex processes that instructional staff employed to manage their actions and interactions as moderators in the webcasts and chats.

A constructivist grounded theory approach guided the collection and analysis of empirical data in the form of webcast media and transcripts, chat logs, students' reflective writing, and semi-structured, intensive interviews with instructional staff. From the study emerged theoretical categories in three tiers related to a generalized moderator process called minding the verge: moderators minded the verge in three conditions of interaction

– converging, attending, and diverging; in three loci of interaction – webcasts, chats, and webcasts+chat; and through six actions of moderating – bonding, orientating, guiding, tending, validating, and branching.

The results of this study provide moderators for the course with insights into their actions in the interactive webcasts and with concepts moderators can use to explore how to manage interactive webcasts more effectively. Beyond effecting substantive changes to interactive webcasts for the course, the study may guide others who wish to pursue further studies of webcasts+chat as they occur in the course or elsewhere, or of other mixed-media environments, or who wish to adopt mixed-media environments for instruction. Other potential areas for research that emerged from this study include the affective states of participants in the webcasts+chat and the use of affective devices, such as emoticons and abbreviations, for showing affective states; the effect that format has on the efficacy of webcasts+chat used for computer-mediated instruction; and the processes students employ to manage actions and interactions in the webcasts and chats.

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ORIENTATION TO RESEARCH

Chapter 1: Surveying Studies of Online Learning

"uh oh... what is the assignment for this webcast again? i zoned into the chatting again haha"

This study contributes to a growing understanding of online learning by examining interactions that took place among students and instructors in a specific educational environment, interactive webcasts that were part of an online undergraduate course that taught a range of Internet-related topics and skills at a large public university. In the first chapter I provide a grand context for the study, first by noting the increasing attention institutions of higher education are paying to online instruction, particularly how the societal trend toward greater digital interpersonal connectivity is affecting instruction; and second by surveying studies of interactive online learning to demonstrate opportunities to contribute to a growing field of study. In the second chapter I delimit the context for the study, first by recounting my own history as an instructor for the course, during which time my research question emerged, then by offering symbolic interactionism as a framework for devising a method to "get at" the research question, which asks broadly what it means to be a moderator in an interactive webcast, a member of the instructional staff whose job is to help facilitate online interactions. I end the second chapter by explaining decisions I made to bound the study in scope and purpose. In the third chapter I specify the particular methods I used for data collection and analysis in order to construct a theory grounded in the data, and in the fourth chapter I explain the results of the study. I discuss the substantive and theoretical implications of the study for the course specifically and for online learning in general in the fifth chapter, and I

conclude in the sixth chapter with some broader implications of the study and an invitation to conduct further studies.

DIGITAL SOCIALITY AFFECTS ONLINE LEARNING

Since 2003, yearly reports from the Sloan Consortium (Sloan-C) on the state of online courses at institutions of higher education in the U.S. have charted the rapid uptake and increasing acceptance of online instruction by students, faculty, and administrators. The number of students enrolled in online courses in U.S. universities has increased from 1.6 million in fall 2002 to 3.9 million in fall 2007, an increase from 11% of all students enrolled to 20% (Allen & Seaman, 2003, 2006, 2008). The Sloan-C and others[1] report the expansion of online instruction sweepingly, in terms of administrative motivation, infrastructure investment, stakeholder acceptance, measures of success, and "delivery" formats, occasionally via anecdotal examples of digital media applications used alone or in concert in specific educational contexts, but rarely in terms of the personal agency of instructors and students. A prevailing theme in these reports, concurrent with popular press reports[2] and with advertising,[3] nevertheless reflects the current *zeitgeist* of what is alternately called the connected era (Dell, 2008), connected age (Fine, 2006), or network society (Castells, 2000): increasingly accessible social and collaborative digital computing is changing the way people connect with one another and interact.

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[1] Reports reviewed come from the Alliance for Higher Education Competitiveness (2004, 2005), Educause (2002, 2006, 2007), The New Media Consortium (2006), the U.S. Department of Education (2006), the National Center for Higher Education Management Systems (2002), the Council of Higher Education Management Associations (2006), the National Center for Public Policy and Higher Education (1999), and the Center for Academic Transformation (1999, 2001, 2003).

[2] The *PC World* article "Hi-Tech Shirts Link Social Networks to the Real World" details "functioning social Web links" printed on clothing that enable cell phone users to retrieve social networking information about the wearer, such as details from the wearer's Facebook profile (Raphael, 2008, ¶ 2), effectively narrowing the gap between virtual and physical copresence.

[3] Dell's advertising brochure *The Connected Era* exploits consumers' sense of a shift in personal interconnectivity by proclaiming, "The way people connect and communicate is changing, and changing the world. A truly globalized information technology infrastructure and those who build, run and use it are creating a new era — the Connected Era."

New ways of connecting affect (among other things) the nature of interactions in online learning environments, but the systematic study of how instructors and students manage new ways of connecting lags behind the burgeoning adoption of online instruction. As the number of and enrollment in online courses increase, and as the facilitators of online courses – administrators, instructors, and information technology support staff – employ established and emerging social software applications and devices in online courses, opportunities continually arise to study how digital sociality is affecting online learning. When course instructors bring into a learning environment the kinds of digital media that they and students use for socializing in their personal lives, what happens? How do students and instructors perceive the effects of digital social media on learning, how do synchronous and asynchronous means of interacting online compare, and how do students and instructors manage their interactions when they use digital social media for online courses?

STUDIES OF ONLINE LEARNING REFLECT A NASCENT BUT GROWING FIELD

Studies in which the researcher intimately observes how instructors and students interact in online learning environments, over time, are few. Studies often take a panoramic snapshot of the opinions or actions of instructors and/or students via survey methods. Survey questionnaires allow researchers to gather information about the beliefs and attitudes of a dispersed sample and use descriptive statistics to assess trends (Creswell) or to isolate best practices. Kim and Bonk (2006), for example, surveyed a sample of 12,000 college instructors and administrators to explore future trends in online education. Generally, the 562 respondents indicated that online, collaborative learning in the form of case-based and problem-based learning will replace "traditional" methods of instruction, but the result will be to enable more "evaluation of knowledge" than creative generation of knowledge. This kind of forecasting provides some insight into the state of

online education, but it admittedly did not explore teaching and learning practices, nor did it question students about learner-centered instruction.

One exploration of practice comes from Knolle (2002), who studied best practices in the use of HorizonLive at California State University, Chico. HorizonLive added one-way audio and real-time chat to Chico's existing video-based instruction. The initial instructor training for HorizonLive taught only functions and limitations specific to HorizonLive. Knolle employed a Delphi technique to ask all fifty-six instructors that had used HorizonLive to record and rank practices for adapting instruction for a synchronous online environment. Respondents emphasized the importance of interactions with and among students, such as responding to students' questions verbally and in writing, asking students to respond via chat to questions posed via audio/video, personalizing chat by having students introduce themselves, and providing a forum during class for students to engage each other. However, Knolle recommended that future studies should include qualitative data from students to test whether what teachers perceived as best practices were enhancing the students' learning experiences.

Shi and Morrow (2006) is another example of a Delphi study. Twenty-three respondents were users of a digital electronic conferencing (e-conferencing) tool, Horizon Wimba, that was part of a larger conferencing system, CCC Confer, within the California Community College system. E-conferencing provides a range of functions for synchronous instruction, including chat, audio, browser control, polling, application sharing, a whiteboard, and archiving. Respondents related specific tools within the e-conferencing system and specific practices to effective synchronous online instruction, but, as in the Knolle study, no students reported their judgments about Horizon Wimba's enhancement of their learning. Both Delphi studies asked instructors to report on their decision making strategies for addressing the seven principles of Chickering and

Gamson's (1991) good practice in undergraduate education, which reflect for better or worse pre-Web approaches to instruction.

A 2005 British study by Davies et al., which used a questionnaire to ask students their judgments about online learning, reinforces the need to adapt instruction for the online environment. When increased enrollment at a health sciences school motivated the implementation of online student learning communities, the instructional staff used problem-based scenarios to promote peer learning[4] in a combination of face-to-face and online activities. The staff set up online discussion applications to facilitate peer learning and expected that students would make use of them naturally, without orientation or instruction in the use of them. In their appraisals of the online learning communities, the staff and students revealed problems that hindered the required interactions among the students, including the varying skill levels students had with computer usage and the frequent network outages that hampered off-campus access to the online learning communities. Poor pedagogical planning left students unable or unwilling to communicate online. For example, upon recognizing that some students were not communicating effectively online, the staff offered clinics to remediate students' lack of proficiency in computer-mediated communication; however, staff did not account for the cultural aspects of online communication, and without any stated expectations for, or guidance in, communicating in an online discussion, students contributed unequally in groups, if they contributed at all, and were confused about how the use of online discussion enhanced their learning. This study illuminates the need for further studies about how to effect successful computer-mediated communication pedagogically.

[4] Davies et al define peer learning by borrowing a definition from Boud et al: "...the use of teaching and learning strategies in which students learn with and from each other without the immediate intervention of a teacher" (1999, p. 414).

Often a specific computer application determines the need to assess online instruction. A 2006 Brazilian study (Fuks, Pimentel, & Pereira de Lucena) explored the difficulties of using chat for educational purposes. Although chat enabled the kind of informal conversation that leads to group identification and social bonding, too many chat participants led to "chat confusion," which resulted from simultaneous parallel conversations that literally sent mixed messages to the students, forcing them to develop coping behaviors to overcome anxiety. According to an unspecified number of interviews with students, chat participants coped by focusing only on the instructor's messages, which meant they missed other important information, or they chose to limit their own messaging so as not to repeat what others may already have typed. In response to the interview data, the research team experimented with successive versions of a mediated chat tool that attempted to address chat confusion. After six successive rounds of interviews and interventions, version 6.0 of the mediated chat tool proved helpful in reducing chat confusion, but the researchers noted the need for further study of chat-based conversation. Fuks et al. employed interviews primarily as an assessment measure of specific features of the chat tool. An increased level of understanding of chat-based interaction would emerge from a more comprehensive study of chat users' interactions and coping behaviors.

Jones, Skirton, and McMullan (2006), in a feasibility study of different methods for electronically distributing health instruction in Great Britain, cobbled together three separate evaluations of systems for bringing instructors, students, and patients together in a learning commons. Non-commercial satellite television drew little participation, was costly to implement, and limited the availability of learning materials, according to survey questionnaire responses from sixty-seven Institute of Health Studies staff and reactions from individuals at forty-two of the sixty-four sites with satellite television

receiving dishes. Internet videoconferencing proved somewhat useful but was also limiting, requiring the use of special equipment that had to be scheduled for use, a conclusion based on monitoring usage trends between 2002 and 2005. Webcasting proved the most feasible of the three systems, based on two sources of data: a review of forty-one reports of live webcasting used for instruction, and a single discussion among a lecturer and seven students on the potential of webcasting for face-to-face seminars. While conclusions from this study indicated that webcasting provides greater flexibility of use and greater interactivity for instruction, the researchers noted that the evaluations were not part of a structured research program and that such a structured study would be helpful.

Pan and Sullivan (2005) promoted the use of a particular application for synchronous interaction in their study of the educational benefits of using the free Voice over Internet Protocol (VoIP) client Skype at the University of Texas, Brownsville. VoIP enables synchronous audio computer-mediated communication. Skype is a free VoIP software available via the Web. The study outlined the results of using Skype in two online graduate courses, based on unexplained "anecdotal evidence" and on content analysis of Skype conversation logs and answers the twenty-eight students provided to eight open-ended questions. Students reported the need for synchronous interaction in order to carry out group projects constrained by time and space. The audio format of Skype motivated them to learn, to contribute to the conversation, and to be responsible to the group. Pan and Sullivan reported this study as an important initial attempt to discover a new tool that suits online learning, but they included very little data in their reporting.

In contrast to the Pan and Sullivan study is the lengthy anecdotal reporting from Wang and Beasley (2005), who explored the use of instant messaging (IM) for structured discussion in an online graduate education class. Wang and Beasley explicitly stated that

the purpose of their paper was "not to report formal data analysis but to report the experiences observed directly by the instructor" in using IM for instruction (p. 73). This study provided a model for the successful implementation of IM in an online learning environment. The instructor carefully planned for and facilitated the use of a complex learning tool, scheduled time for and monitored student-led interactions, chose a tool that left students control over their learning environment, and encouraged the exploratory use of IM alongside other applications. However, the conclusions rest solely on the instructor's assessment of IM as a Type II technology for instruction as defined by Maddux, Johnson, and Willis (2001). The study included no reporting of students' perceptions about their experiences using IM in the online class.

Nian-Shing, Hsiu-Chia, Kinshuk, and Taiyu (2005) relied on students to help evaluate an online synchronous learning model developed and implemented to guide instructors' use of synchronous learning management systems (SLMS), such as the National Sun Yat-sen Cyber University in Taiwan, where the study took place. The increased (and increasing) bandwidth of broadband Internet access decreases restrictions on synchronous interactive tools. The research team looked at text, audio, and video that an SLMS combines with digital whiteboards and other classroom features to provide a range of tools for instruction. Noting the anecdotal evidence of the advantages to synchronous instruction, including its capacity for immediate response and the increased motivation to be present, the researchers suggested a need for further pedagogical research. Nian-Shing et al. produced two case studies of synchronous learning, one a case of live instruction and the other a case of synchronous computer interaction for office hours. A subsequent survey of students resulted in fifty responses, with high satisfaction rates on questionnaires and comments that stressed the positive aspects of live interaction both for instruction and for consultation.

I found two studies that criticized synchronous online instruction, although the criticism reflects more the nature of failed pedagogical approaches than the nature of online instruction, per se. Edmonds (2006) compared the exam scores of two sections of a general psychology course, one taught in a traditional classroom and the other taught online. The study reported higher exam scores for the students in the traditional classroom. Students in both sections received the same reading assignments and vocabulary sheets. Questions with pointers to specific Web sites substituted for lectures in the online section, and short essay questions substituted for class discussion. The study outcome illustrates the need in the computer-mediated, online classroom for student-centered instruction, or instruction that considers what students need in order to learn in a given environment. Edmonds based his study on a traditional, instructor-centered lecture format for instruction. The lack of social interaction decreased the motivation to learn in the online "lecture." The idea of students responding to "discussion questions" without the benefit of discussion violates social constructivist principles[5] of learning. The Edmonds study revealed the lack of insight that can result from the reliance on purely quantitative measures, in this case exam scores, to measure the efficacy of online instruction.

Wang (2008) also revealed the potential for misinterpretation when a researcher places too much emphasis on quantitative analytics. Wang compared three variables between two groups of learners in a media authoring course, one face to face and the other online, in order to explore the efficacy of a synchronous communication tool, Yahoo Messenger, in helping teach hands-on media authoring online. Wang measured

[5] "Social constructivist principles," "constructivist," and "constructivism" as used throughout this proposal refer to the meta-theoretical perspective on knowledge formation and information practice outlined in Talja, Tuominen, and Savolainen (2005) and representing the learning theories of Bruner, Vygotsky, R. S. Taylor, and others: knowledge is social; individuals live in worlds that are physically, socially, and personally constructed; and individuals' knowledge structures and socio-cultural environments are dynamic and mutually constituted.

one of the three variables, the learners' sense of community, with Rovai's Classroom Community Scale (CCS), which Rovai and other researchers (Wang listed four) have validated through a number of studies. Wang hypothesized that the CCS measures would show no significant difference between the two groups of learners, but the results showed a statistically significant difference ($p=0.047$ at $\alpha=0.05$) between the two groups' community scores: the learners' sense of community in the face-to-face group was greater than that in the online group, though both measures reflected a strong sense of community when compared with mean scores from previous studies. The online group in Wang's study, for example, showed a higher mean community score than did the group in an earlier study by Dawson (2006). In spite of qualitative evidence to the contrary in the form of learners' responses to open-ended questions, Wang concluded decidedly, based on the CCS measure, that the use of online instruction for hands-on learning was less than effective.

Case studies offer some of the richest insights into the participatory processes of online learning, including Mabrito's 2006 study of the effectiveness of synchronous versus asynchronous collaborative communication in an online business writing class. After comparing students' use of both synchronous and asynchronous computer-mediated discussion forums to complete a group task, Mabrito concluded that the synchronous method of communicating – in this case via a real-time conference chat feature in WebCT – offered specific advantages. Students communicated more in real time and generated more new topics of conversation related to the course than they did in the asynchronous discussions. Students reported that they devoted a third of the time they spent communicating in real time to general conversation unrelated to their assigned tasks and another third to group procedures, but they also rated their real-time discussions as more productive than their asynchronous discussions, during which their communication

focused over 80% of the time on the task. The gap between students' perceptions of the two modes of communicating and the instructor's perceptions underscores the need for further fine-grained studies of social interaction in online group activities.

Osman and Herring (2007) employed a highly-structured case study methodology to evaluate the potential of synchronous chat for deep learning (as opposed to "rote" learning). The study involved Azerbaijani graduate students and their U.S.-based graduate facilitators in a distance education program. The researchers evaluated four chat session transcripts from four successive months across three established rubrics – functional moves (Herring, 1996; Paulus, 2003), interaction analysis model for measuring knowledge construction (Gunawardena et al., 1997), and teaching presence (Anderson et al., 2001) – using Herring's (2004) computer-mediated discourse analysis (CMDA) in order to test five hypotheses about constructivist, collaborative knowledge construction. CMDA supported a quantitative analysis of the texts, specifically to measure the number and length of messages sent by each student and facilitator. The results of the study – that chat increased the level of collaborative learning activity over time but may not have been the best medium given the language and cultural differences between teachers and students – do not include the perceptions of the participants involved, who may have indicated benefits of the chat left hidden by the quantitative measures of CMDA.

For her 2006 phenomenological study Conceição used semi-structured, open-ended interviews to collect ten university instructors' perceptions of their experiences teaching online. The study participants reported increases in the intensity of their work when teaching online but also increases in personal rewards, particularly the depth of their relationships with students, perhaps due to the increased cognitive engagement and affective effort that online instruction requires of the instructors. According to the study, teaching online requires intense levels of concentration sometimes far beyond teaching

face to face in order to stay engaged in conversations. In the online classroom the instructor must keep the conversation focused while managing a computer interface (opening and closing instant messages, for example), attempting to determine the emotional tone of the messages, presenting new material or asking questions in an engaging manner, and pursuing a comprehensive discussion through prompts and extensions. Teaching online requires intense affective effort, as well, in order to engage personally without the immediate response of face-to-face interactions and to determine the level of formality in language usage. By exploring the experiences of the instructors from their points of view, Conceição discovered new implications for teaching online that previous research had not, specifically that online instruction is rewarding to the instructors in ways that face-to-face instruction is not.

Park and Bonk (2007) used multiple means of data collection to explore graduate students' use of the synchronous conferencing application Breeze. Students in two contexts, on campus and off campus, used Breeze to collaborate on assignments for an educational technology course. The researchers collected qualitative data on the students' use of Breeze through observations, an open-ended questionnaire, individual interviews, course evaluations, and instructors' assessment reports and categorized the data "by pre-determined and emerging categories" (p. 250). The results revealed students' perceptions about advantages and disadvantages to the use of Breeze for the course. Among the perceived advantages were an enhanced sense of connectivity with fellow students and the benefit of prompt responses and support from instructors and peers, unlike the disconnected and delayed responses that asynchronous conferencing and email allow. Students noted time constraints among the disadvantages, given the scheduling of one-hour conference times in Breeze that restricted the depth of discussions and limited reflection time. Students also noted Internet connection problems and language barriers

as disadvantages. Park and Bonk concluded that "scant research" exists on students' perceptions of synchronous online learning.

Jeong (2007) found advantages and disadvantages to students' use of instant messaging (IM) for interactions between students and instructors in a three-year grounded-theory study. Jeong used data collected via a survey questionnaire that he administered to his own students in nineteen classes he taught between summer 2001 and spring 2004. As in the Park and Bonk Breeze study, students generally favored the use of synchronous communication for the prompt responses and increased sense of connectivity it offers, but they also recognized the potential for miscommunication due to the lack of auditory and visual cues. Students also pointed out time constraints based on the instructor's limited availability online. Jeong's study is a rare look at students' perceptions across time, but his grounded theory approach reflects cursory coding of students' responses to a questionnaire with no evidence of probing responses further through interviews with students, of further sampling to enrich the initial coding, or of verifying his findings with the students in future classes. Jeong's study illustrates the growing use and acceptance of IM as one of several synchronous communication means that are supplementing or replacing asynchronous means, such as email.

In her 2005 dissertation Shi sought to illuminate what synchronous computer-mediated communication adds to instruction that asynchronous computer-mediated communication cannot or does not, which is the spontaneous, negotiated learning within the context of a group that is the hallmark of social constructivist education. Shi used discourse analytics on forty-four conference transcripts from a synchronous conferencing tool, eClassroom, to measure both the quantity and quality of conference teachers' "moderating" students' engagement over the course of one eleven-week semester in an all-online class. Shi's purpose was to explore real-time computer-mediated

communication in order to measure the effects of teacher moderating behaviors on three variables of students' engagement with the instructor and with each other, variables adapted from previous research: behavioral, social-emotional, and intellectual. The goal of moderating was to establish a community of interaction from a collection of personal monologues. In order to achieve that goal, moderators established and maintained warm and inviting milieux, recognized individual students' contributions and connected them with others, and provided prompts to keep the conversations flowing. Shi found that moderating affected most directly students' intellectual engagement, but, in order to get students to the point of intellectual engagement, moderators had to create connections with them and among them by fostering students' socio-emotional engagement, when students see themselves as part of a group rather than strictly as individuals, seek a sense of belonging, and "render mutual support" (p. 27). While Shi applied qualitative discourse analysis to six of the eleven weeks of transcripts in order to enrich the findings in the quantitative analysis, she emphasized the quantitative analysis, limiting the qualitative analysis to one aspect of one of the variables: specifically, how teachers moderated the conferences.

A summary online learning studies

Current studies of synchronous interactions in online learning, while sparse, indicate two reasons for the increasing adoption of synchronous means for distributed instruction: one, the increasing accessibility of the means to effect real-time interactions for instruction; and two, the increasing awareness of the advantages real-time interactions offer: increased connectivity, immediacy, and collaboration; and the ability to achieve the dynamic group negotiation of meaning that is central to student-centered, constructivist learning. Studies also point out disadvantages of synchronous online instruction, including constraints when interacting across time zones or for limited amounts of time,

and the potential for miscommunication in the absence of audible and/or visual language cues. With few exceptions the research is empirically based, relying mostly on surveys, interviews, and textual analyses of logged interactions; however, few studies ask students their perceptions of learning in a synchronous online environment. When asked, students generally favor synchronous online interaction for instruction and for support. In studies that explore the nature of learning online in real time, researchers often begin with assumptions about learning that pre-date online learning, or they focus narrowly on pre-determined variables: research explores the functionality of a specific application (such as chat, instant messaging, or VoIP; or HorizonLive, or Wimba, or Breeze), or how synchronous interaction compares with asynchronous interaction, or how synchronous interaction fits a specific instructional model or learning outcome in face-to-face teaching. That studies of online learning are largely exploratory or comparative is evidence of a nascent but growing field of inquiry.

Chapter 2: Framing a Study of Moderating Interactions

EXPERIENCE, CONFLICT MOTIVATE STUDY OF INTERACTIONS

My own experiences as an instructor in an online course motivate this study, which looks at interactions that occurred during interactive webcasts. The webcasts combined live video and audio streams with group chats to effect dynamic learning environments for an all-online undergraduate course. Students in the course, offered every semester in the school of information at a major U.S. public university, create personal Web sites while exploring emerging digital communication media and learning about Internet history, information security, information searching and retrieval, and intellectual property. Students come into the course from various stages in their college careers and from a variety of disciplines.[6] In each fall and spring semester nearly 200 students enroll in four sections of the course. Most interaction among the students and instructors, including the undergraduate teaching assistants (UAs) and graduate teaching assistants (GAs), occurs via electronic mail for one-to-one asynchronous communication and instant messaging for one-to-one synchronous communication. The interactive webcasts, which allow students to see and hear their instructors and invited guests speak on topics related to the course, provide the only formalized opportunity for students in the course to interact with each other. Active participation in webcasts is one of two ways students can earn participation points for the class; posting written reflections to online articles is the other way students can earn their participation points.

[6] Students in one of four sections of the course during the spring 2006 semester came from the following academic disciplines: education, neuroscience, sports medicine, corporate communications, sports management, computer science, liberal arts, kinesiology, accounting, advertising, marketing, health promotion/fitness, finance, architecture, management information systems, public relations, journalism, chemistry, psychology, pre-med, engineering, and economics.

After the initial webcast of the spring 2006 semester, my first semester as an instructor for the course, two of the experienced instructors questioned the efficacy of webcasting as an instructional strategy, as did two studies that year (Shi & Morrow, 2006; Jones, Skirton, & McMullan, 2006). Attendance at the webcast was not mandatory, but students in the chats acted in ways that detracted from the discussion in the webcast. The following excerpt from one of the four chat rooms during the first spring 2006 webcast illustrates what the instructors perceived as a problem:

> **anonymous:** we can have a webcast watching party Feb 2, 2006 7:27:13 PM CST
> **MB:** TRUE Feb 2, 2006 7:27:17 PM CST
> **SB:** my room is too small, sorry lol Feb 2, 2006 7:27:18 PM CST
> **JU:** i'll bring the LAN cables Feb 2, 2006 7:27:23 PM CST
> **MB:** I GOT A 52" LCD hdtv HERE Feb 2, 2006 7:27:26 PM CST
> **SP:** its freezinggggggggggggggggggg Feb 2, 2006 7:27:26 PM CST
> **SD:** the movie isn't working Feb 2, 2006 7:27:31 PM CST
> **anonymous:** ill bring the keg Feb 2, 2006 7:27:31 PM CST
> **SB:** oh how nerdy.. lol webcast watching party haha Feb 2, 2006 7:27:34 PM CST
> **SP:** lol Feb 2, 2006 7:27:40 PM CST
> **NM:** fly, lets play some CS source tonight.. Feb 2, 2006 7:27:41 PM CST
> **SB:** keg.. oh wait.. lol Feb 2, 2006 7:27:44 PM CST
> **MB:** HAHAHAH Feb 2, 2006 7:27:45 PM CST
> **anonymous:** 1.6 Feb 2, 2006 7:27:46 PM CST
> **GR:** under age drinking! Feb 2, 2006 7:27:48 PM CST
> **SD:** no everone should go to EXOCU Feb 2, 2006 7:27:48 PM CST
> **anonymous:** not source Feb 2, 2006 7:27:49 PM CST
> **SD:** EXODUS Feb 2, 2006 7:27:51 PM CST
> **MB:** LETS PLAY DOTA! Feb 2, 2006 7:27:53 PM CST
> **SB:** then we can PLAY HALO.. hahahahha Feb 2, 2006 7:27:54 PM CST
> **MB:** DOES ANYONE PALY DOTA? Feb 2, 2006 7:27:57 PM CST
> **GR:** club exodus is the place to be tonight Feb 2, 2006 7:28:00 PM CST
> **SP:** whats at exodus? Feb 2, 2006 7:28:00 PM CST
> **anonymous:** halo2 Feb 2, 2006 7:28:00 PM CST
> **JU:** DOTA is weak Feb 2, 2006 7:28:01 PM CST
> **MB:** THE EHCK Feb 2, 2006 7:28:05 PM CST
> **MB:** YOU'RE WEAK Feb 2, 2006 7:28:06 PM CST
> **JU:** regular wc3 is where its at Feb 2, 2006 7:28:07 PM CST
> **SD:** EXODUS is where the party is tonight! Feb 2, 2006 7:28:09 PM CST
> **SB:** oh.. i'm behind the times i guess Feb 2, 2006 7:28:11 PM CST
> **SD:** GO GO GO Feb 2, 2006 7:28:11 PM CST
> **MB:** NO Feb 2, 2006 7:28:11 PM CST

MB: DOTA! Feb 2, 2006 7:28:12 PM CST
anonymous: lets go dance techno at spiros Feb 2, 2006 7:28:14 PM CST
JU: lvl 22 UD FFA Feb 2, 2006 7:28:17 PM CST
IQ: wow this is a dorky class Feb 2, 2006 7:28:20 PM CST
NM: yah def Feb 2, 2006 7:28:21 PM CST
MB: ONLY IF SD GOES Feb 2, 2006 7:28:22 PM CST
MO: indeed Feb 2, 2006 7:28:22 PM CST
SB: i have to do my freaking advertising project tonight Feb 2, 2006 7:28:24 PM CST
IQ: me too Feb 2, 2006 7:28:28 PM CST
IQ: this weekend Feb 2, 2006 7:28:32 PM CST
WY: whats is the point of this? Feb 2, 2006 7:28:34 PM CST

What's the point of this, indeed, the instructors wondered. Instructors and staff had conducted interactive webcasts since 2003, but the combination of live, streaming audio and video with synchronous chat, used with so many students of such variety for a shared online experience, was still new relative to all other aspects of the course. The implementation of the webcasts had been as much a test of whether the combined technologies would work as much as it had been an instructional strategy, and it appeared that, while the equipment functioned fine, the webcast as a learning environment did not. My senior instructors and I discussed whether the webcasts were worth the time and effort required of the instructors, information technology (IT) support staff, and students to make them happen.

Rather than abandon the webcasts, the instructors employed methods for structuring the webcasts and for managing interactions with students in the chat rooms in order to decrease the frequency and duration of "off-task" behaviors. By suggesting some specific, initial ideas for structuring and managing the webcasts differently, I was fulfilling the role for which I was chosen as an instructor, that of "experienced educator." I was the only instructor at that point with any professional teaching experience, and part of my job was to add some "pedagogical soundness" to the course. I added anticipatory pre-webcast activities to the instructions for how to join a webcast that we posted on the course home page before each webcast (see Illustration 2.1).

announcement fall 2008

Webcast #4

Mon, 10/20/2008 - 22:45

Join in Tuesday, October 21 at 7:00 P.M. for the Module 4 Webcast on *information search and evaluation*.

Before joining in...

think about the role of libraries in your life and how the Internet is changing "the library" as you see it. To help you, please visit the following sites, all part of the ongoing efforts of the ever-evolving Libraries to maintain a world-class, high-service library system:

Library Widgets

Library Reviews
Go ahead and submit a review to the Reviews site (if you like.) The Submit Review link is in the right-hand menu on the reviews page.

Resources For Undergraduates

Our guest is **Millie Reed, Instruction and Outreach Librarian for the Libraries**. Millie will talk about the ways that the Libraries are evolving to meet the needs of users like you. Consider the following in anticipation of Millie's visit, and be prepared to ask her questions and offer her your own suggestions for how the Libraries can meet your needs:

1. As the online world grows and Google expands its reach, libraries are taking new approaches to providing information alongside these other information providers. *What is the nature of the relationship(s) among the libraries, Google, and other information providers?*
2. A big part of what the Libraries are doing is making sure they have a presence where their users already are online. *To what extent and in what ways should / must libraries create a presence where you are online? (Think Facebook.)*
3. There's a big movement to build more community and Web 2.0 enhancements into existing library resources and to use new technology alongside more established library technology. *What responsibilities do libraries have to adapt the way they do things to meet the expectations and demands of their users?*

Finally, when you join the Webcast tonight, please have the **libraries Website** open so you can easily see the items that Millie will be discussing with you.

Illustration 2.1: Example of anticipatory pre-webcast activities added to instructions for how to join a webcast

I also added follow-up assignments that added a writing component to the webcasts in the form of reflections that students completed as blog posts (see Illustration 2.2).

announcement fall 2008

For Webcast Participants Only

Wed, 10/22/2008 - 18:21

Thank you for participating in the Webcast and chat. Please complete the follow-up assignment to the discussion of Information Search and Evaluation.

Answer the following questions as a blog post. You may answer each one briefly -- as in a single paragraph for each question -- but be reflective and specific. Demonstrate that you thought seriously about your responses before you wrote them. Choose blog post type **Webcast 4 Response: Search and Evaluation**. You may receive up to ten (10) points for attendance at the webcast and up to ten (10) points for your written responses for a total of up to twenty (20) points.

1. Millie shared a lot of useful resources available to you via the Libraries. What was the one thing that Millie shared that made you go, "Oh, wow, I'm definitely going to use that!"?
2. The ways in which the Libraries are adapting their services to meet users' needs -- making the library available outside the library building and library website, and inviting more user input before decisions are made -- reflect 21st-century changes that are happening in all types of libraries. What single idea would you share with libraries that would make them more viable to you as a user?
3. How might this discussion have been more effective or meaningful for you?

If you did not attend the Webcast, you will need to complete the **alternative assignment**.

RESPONSES ARE DUE WEDNESDAY, OCTOBER 29 at 6:00 P.M.

Illustration 2.2: Example of a follow-up assignment to a webcast

Other instructors implemented other means for managing interactions, including asking students not to type while a guest was speaking, asking direct questions of students, soliciting questions from students, and instructing students to use specific keystrokes to indicate specific responses to questions, such as typing a caret (^) to raise a hand, or typing an "A" to agree or a "D" to disagree with a statement.

During the time I was adding what I thought was pedagogical soundness to the course, I recognized a tension developing from our attempts to manage the webcasts. We (instructors) recognized that constraining students' behavior to keep the webcasts focused required a tacit deftness in order to keep the webcasts inviting "places" to be. Constrain too much, and the students might prefer to do the alternate participation assignments, which was acceptable but which did not provide the dynamism that the webcasts

provided. From their inception the interactive webcasts were environments for minimally-directed learning, where the instructors would loosely outline objectives but then would allow the free exchange of ideas. The webcasts were to provide relief to the highly-structured and static nature of the rest of the course. The participation elements of the course, including the webcasts, provided the means to add enrichment beyond the course objectives, which students met through the completion of the rest of the course requirements. The interactive webcasts were the only element of the course that enabled students, instructors, outside guests, and other staff to come together and co-create something unique.

Consider a "typical" webcast: One of the four instructors for the course will have secured a guest or guests and decided on a format for a particular webcast. The responsibility rotates among the instructors, who are free to structure their forty-five minutes of live webcast as they see fit. Rarely do two webcasts in a semester follow the same format. Some feature an instructor and guest engaged in conversation; some feature a panel of guests discussing a topic. Some guests address the participants directly through the webcast and ask for varying levels of interaction. In order to view the webcast, the participants will have chosen one link from among three on the course home page (see Appendix A) to open the live, streaming webcast in a media player, either Real Player or Quicktime (usually.) Often server overloads disrupt the streams, forcing participants to reconnect or choose a different stream. Participants will also have opened a jabber chat client, usually Adium or Pidgin, in order to converse via text with each other, including their instructors and TAs, in their course sections. The instructor-host for the webcast will manage the guest(s) while also managing the chat for one section, usually with the help of one or more TA. The other instructors and TAs manage their own sections. The

participants must attend to the video and audio stream in the media player window while they interact and respond to the webcast, if asked, in the chat window.

To an outsider a webcast must appear frenzied, chaotic, and devoid of anything meaningful. Note in Illustration 2.3 the chat exchange among several participants (some known and some "anonymous") in a two-and-a-half-minute segment from a webcast in spring 2006. To a participant, the webcast *is* frenzied and chaotic, with threads of conversation interspersed as individual contributions to the chat appear in a window on the participant's computer screen and quickly flow upward and out of view while, in a separate window, a live video and audio discussion takes place that may or may not make direct demands on the attention of the remote participants. The chat exchange in Illustration 2.4, excerpted from a webcast in spring 2007, shows a more cohesive conversation. Perhaps the pedagogical practices implemented after spring 2006 helped to keep the participants more engaged with the subject of the webcast, or perhaps it was something else. Every webcast is a dynamic instance of communal interaction, subject to the tensions inherent within any group of people and to outside forces acting upon the group or upon individuals within the group.

TF: hey don, how come you dont get to be on tv today 7:22:32 PM
SE: ok i got mine back 7:22:33 PM
anonymous: closing it & reopening quicktime does no good @ all it's the feed 7:22:34 PM
anonymous: alright 7:22:37 PM
anonymous: hello 7:22:43 PM
anonymous: check it out now, guys 7:22:43 PM
anonymous: a;skldfj;alskdjf;lkasjdf;lkjasl;kdfjas 7:22:45 PM
DC: well it works for me every time 7:22:50 PM
SB: english please 7:22:54 PM
CT: still not connected 7:22:55 PM
SB: haha 7:22:56 PM
anonymous: nice picture 7:23:05 PM
anonymous: caitlin, what is your quicktime doing? 7:23:09 PM
anonymous: Hamerly...are we only going to be watching these 2 guys? 7:23:10 PM
SB: plushenko is weird 7:23:15 PM
AH: what do we do now 7:23:22 PM
anonymous: this webcast will just be the two of them 7:23:23 PM
anonymous: still not working 7:23:26 PM
AH: not working 7:23:28 PM
anonymous: they have different people each time 7:23:28 PM
anonymous: very edvard munch-esque 7:23:29 PM
anonymous: are we gonna have to do the alternate assignment if we can't get QT up and running? 7:23:30 PM
JE left the session 7:23:31 PM
JE joined the session 7:23:31 PM
DC: i want to see apollo 7:23:34 PM
DH [instructor]: Yes, they are your show tonight. 7:23:36 PM
anonymous: DC, the assignment is to participate in the classroom. 7:23:48 PM
anonymous: alright 7:23:58 PM
anonymous: ok 7:23:59 PM
CT: it keeps saying 404 not found 7:24:00 PM
anonymous: they will let you know what will happen because of QT, but stick around to see if it works 7:24:03 PM
JM: Professor Hamerly, are we only asking questions about security? 7:24:04 PM
GP: What is the guest speaker's name? 7:24:09 PM
anonymous: so has anyone gotten qt to work after getting the "not found" error 7:24:09 PM
DH [instructor]: Folks, I feel your pain, and I thank you for being patient. 7:24:13 PM
CT: so i close quicktime and reopen it and try again 7:24:15 PM
anonymous: Caitlin, go back to the 312 webpage and recopy the url 7:24:16 PM
CT: it still won't work 7:24:19 PM
NU: No, still won't work 7:24:22 PM
DC: mine works 7:24:26 PM
DC: i got that message 7:24:30 PM
anonymous: when you paste it into quicktime, make sure there are no extra characters at the end, especially spaces 7:24:34 PM
AH: i atleast feel i am trying 7:24:35 PM
DC: and closed qt and repoedn it 7:24:37 PM
DH [instructor]: Janna, security is the topic tonight, but if you have another question, shoot. 7:24:40 PM
TF: dong where is my automobile 7:24:47 PM
DH [instructor]: The speaker is Alan Johnson. 7:24:52 PM
AH: its just not willing to cooperate with me 7:24:54 PM
TF left the session 7:24:56 PM
SE: ha 7:24:56 PM
anonymous: automobile? 7:24:57 PM

Illustration 2.3: Chat excerpt from webcast, February 15, 2006: known and anonymous participants contribute 51 lines of chat over two minutes and twenty seconds, averaging one contribution every 2.75 seconds

MR: it's pretty cool what you find when you google your name or your friends 6:15:05 PM
CV: THERE IS A TON OF STUFF ON GOOGKD ABOUT ME 6:15:10 PM
MR: especially the information they put 6:15:15 PM
CV: DANG I DIDNT REALIZE HOW MUCH THERE IS 6:15:16 PM
KD [moderator]: Did you all hear Amy? 6:15:17 PM
MR: in ut directory 6:15:18 PM
RC: I have been stalked! 6:15:19 PM
BO: didnt we do this for the module? 6:15:21 PM
FP: ut stalkernet! 6:15:23 PM
RC: it's scarrry shit. 6:15:24 PM
PM: there is nothing about me 6:15:24 PM
AS: google doesnt get me anything, and i iknow there is alot about me on facebook 6:15:30 PM
PM: yes we did this for the module 6:15:30 PM
MF: yeah i was pretty surprised to find stuff about myself when i searched google 6:15:31 PM
DH [instructor]: Oh, CV, what kind of stuff did you find? 6:15:33 PM
AS: so the 2 are not connceted 6:15:36 PM
LL: google has stuff about me from high school 6:15:40 PM
AS: at all i gues 6:15:41 PM
LL: awards and stuff that i received 6:15:47 PM
MF: yeah same here LL 6:15:49 PM
RO: my name is too weird to come up in anything except facebook and people's blogs 6:15:55 PM
CV: well there is a lot of stuff about when i played in high school a lot of articles i didn't even know would still be on the internet 6:16:06 PM
BM: Apparently I was once a french Actor 6:16:11 PM
IJ: this is sad. Everyone with my name is on there except for me 6:16:13 PM
AS: ppl that got stuff back from google, is it cuz u myspace or what? 6:16:15 PM
IJ: i have nothing 6:16:15 PM
GG: it says im a professional poker player (profile) nice 6:16:15 PM
RC: I found things that represents me when i googled my name..very specific to who i am..so it wasn't anything shocking. actually i'm going to be in a published paper..which i found supprising. 6:16:17 PM
BB: my name came up in google but it was other people with the same name as me 6:16:21 PM
CV: i also found a lot of stuff on here from the past years that i played as well as a bunch of stuff from this year 6:16:23 PM
GG: too bad thats someon with the same name as me 6:16:26 PM
BC: There isn't anything about me! But my grandfather's name pulled up A LOT of things...creepy 6:16:31 PM
PA: theres a bunch of things about me in high school 6:16:31 PM
LL: there is also a whole family timeline for my family 6:16:34 PM
LL: thats kinda creepy 6:16:37 PM
GK joined the session 6:16:38 PM
GG: all i found when i googled my name was information about the author GG 6:16:40 PM
CG: i found an obituary about someone with my name 6:16:42 PM
MF: i actually found a link to a video of a dance i did in a talent show! 6:16:43 PM
GK left the session 6:16:44 PM
AS: thats probably cuz ur family memebr set that up.... 6:16:49 PM
KC: nothing too interesting comes up about me 6:16:50 PM
DA: the only thing that comes up thats actually about me is a ascholarship 6:16:52 PM
KD [moderator]: MF that is neat! 6:16:52 PM
GK joined the session 6:16:53 PM
TR: I think i found some of my relatives from over seas 6:16:56 PM
DH [instructor]: BC, what did your grandfather do? 6:16:59 PM
PM: i found nothing about myself 6:17:01 PM
DD: nothing really comes up that directly relates to me 6:17:03 PM
FP: apparently i was in a movie in 1977 called the crater lake monster :\ 6:17:05 PM
TR: lol i typed my full name and i see names of my uncles/cousins 6:17:08 PM
BA: most of what came up about me was from high school sports, articles from our local newspaper 6:17:08 PM
KC: all I found were a bunch of car dealerships 6:17:09 PM
CV: whoa there are some really bad pictures on here too!! lol 6:17:10 PM
RO: i want to star in a movie 6:17:11 PM
MF: all i found was websites from organizations i'm invovled in here at UT 6:17:11 PM
AS: there are a million ASs, but when i typed in "AS university of _____" nothing came up...how weak is that 6:17:13 PM
BC: My grandfather owned a sporting goods store 6:17:14 PM
PA: nothing suprised me about myself 6:17:15 PM
DH [instructor]: Try googling Liam or Amy or me. 6:17:17 PM
NT: is an 11 year old boy whose family moved from Vietnam to the United States before NT was born 6:17:28 PM

Illustration 2.4: Chat excerpt from webcast, February 15, 2007: participants (all known) contribute 58 lines of chat over two minutes and twenty-three seconds, averaging one contribution every 2.47 seconds

To explicate this mixed-media format (webcast plus chat) as a useful online learning environment and to explore the tensions that the webcasts create among the participants required a formal study of the complex processes participants employ while managing their actions and interactions.

SYMBOLIC INTERACTIONISM PROVIDES A THEORETICAL FRAMEWORK

Symbolic interactionism, a sociological approach to theory and method rooted in American pragmatism, provides a theoretical framework for developing studies of the "complex processual nature of human activity" (Saxton, 1993, p. 235). Since 1937, when Herbert Blumer introduced the term "symbolic interactionist,"[7] many variants of interactionist research have developed, but the primary concern of symbolic interactionism remains how people construct meaning in their lives as they interact. Although it takes many forms, interactionism continues to be a viable orientation to the study of human group conduct. At least two journals[8] focus exclusively on symbolic interactionist research, and many others across many domains publish research rooted in symbolic interactionism. A quick topic search of the Social Sciences Citation Index for "symbolic interactionism" yielded 369 papers published between 1975 and 2009. Over 30% of those 369 papers (116/369) appeared in the last five years, including the following, which represent the diversity of topics within the framework of symbolic interactionism: race, class, and gender in two Austin, Texas toy stores (Williams, 2005); women surviving HIV/AIDS in Thailand (Klunklin, 2006); social distancing among drag queens and gay men in Florida (Berkowitz, Belgrave, & Halberstein, 2007); humans associating themselves with nonhuman animals to enhance social status (Berry, 2008);

[7] The term "symbolic interactionists" first appeared in Herbert Blumer's essay "Social Psychology" in *Man and Society: A Substantive Introduction to the Social Sciences*, edited by Emerson P. Schmidt and published by Prentice-Hall, 1937.

[8] *Symbolic Interaction*, ISSN 0195-6086; *Studies in Symbolic Interaction*, ISSN 0163-2396

and unspoken social rituals of the swimming pool (Scott, 2009). These particular examples represent the study of people interacting in face-to-face social situations, but what happens when people interact online?

In his 1969 essay on the methodological implications of symbolic interactionism, Blumer offered three basic premises to describe the interpretive nature of human interaction. The first recognizes that humans interpret actions, that while engaged in interaction people have to take account of what they and others are doing or are about to do. In the face-to-face world people have at their disposal ways of knowing and interpreting what others are doing or are about to do that are unavailable in an online world. In a chat room one cannot see, smell, or hear the persons with whom she is communicating, so the accustomed symbols of interaction – gestures, tones of voice, facial expressions – are unavailable. One has to rely on other symbols to interpret and participate in interactions. Indeed, a new set of socially-structured symbols has arisen in the use of computer-mediated communication. Acronyms and emoticons in e-mail and instant messaging represent gestures and facial expressions, and letter case signals tone of voice. In the face-to-face world taking turns to speak in a group is socially acceptable, but an online environment invites simultaneous action. Blumer describes how humans conduct themselves in an ongoing process of defining and interpreting their own actions and the actions of others, building up "lines of conduct" (p. 64) out of a series of subordinate acts: noting the actions of others, sizing up a situation, establishing an objective, mapping prospective actions, and self-directing decisions and actions. In an environment where the interaction is among people who individually may be isolated or immersed in entirely different social groups, how is the forging of lines of conduct altered or impeded?

Blumer's second basic premise describes the nature of objects and their effects on human interaction. Objects may be concrete, like trees, or abstract, like trust. If joint action, or the "societal organization of conduct of different acts of diverse participants" (p. 17), is difficult enough when various actors in physical proximity are interpreting the same milieu in different ways (i.e., if the same objects hold different meanings for each of them), how much more difficult is joint action when the diverse participants are in separate environments surrounded by different objects, all acting upon them and affecting their actions? Is the behavior of a single actor engaged in some online joint action affected by the objects around her? Would a student joining a webcast behave in a particular way if joining from her dorm room and differently if she were joining from a computer lab and differently yet again if she joined from a coffee house?

Blumer's third basic premise depicts the dynamic nature of interpretive interaction: humans interpret the meanings of objects through interaction with each other and with themselves, in the light of the situations in which they find themselves. One's "self" is an object, as well, defined and redefined through moments of interaction. In many online environments people can create their "selves" without interacting with others. One may place into the societal organization a "face" in the form of an avatar and a name that is purely fictitious. How easily can students and instructors accustomed to role-playing for fun in online social environments adapt to functioning in online social environments used for a university course? In the case of the course chats, for example, some students acted as though their identities were cloaked, the way they would act in the casual chat environments they were accustomed to, when in the course chats their identities were apparent. New means for interacting bring about new patterns of joint action. What actions do diverse participants in a chat expect based on their previous

experiences, and do their previous experiences aid or hinder their interpreting chat that instructors adapt for a different purpose?

Recent studies (Nardi, 2005; Osman & Herring, 2007) have demonstrated a need to measure the efficacy of fostered, synchronous, online interaction among members from different communities, however defined. Blumer's noting that "it is the social process in group life that creates and upholds the rules, not the rules that create and uphold group life" (p. 19) illustrates the challenge to communication when different communities with different social values intersect. Instructors have specific expectations for social conduct, certain rules, that they assume students share, given the fact that instructors and students have shared the common experience of many years of education. Instructors' incorporating into the common experience of education tools of communication that many of our students use outside of education produces conflict. Do the expectations that participants have for how to behave in classroom environments differ markedly from their expectations for how to behave in online environments? How difficult is it for participants in conflict to let go of competing expectations for human conduct and jointly construct new ones? How would one recognize that the process of jettisoning old expectations and jointly constructing new ones were going on?

Blumer describes two modes of inquiry that get at what is going on in a given social situation: exploration and inspection. Exploration requires flexible methods for data collection and analysis to get a clear picture of the particular "sphere of social life" (p. 36) that is under investigation. Such methods of exploration may include (but are by no means limited to) direct observation, interviewing people or listening to their conversations, or examining texts associated with the area of social life being studied. The aim of exploration is to develop a rich and accurate picture of the social sphere so that subsequent talk about it and questions asked of it are based upon empirical evidence

and not speculation. Inspection means the intense focused examination of empirical evidence that arises from exploration and holds up under repeated scrutiny through the constant comparison of data to data between incidents and across time, and of concepts as they emerge and evolve. This study employs constructivist grounded theory methods to apply these two modes of inquiry to the sphere of social life I alternately call *interactive webcasts* or *webcasts plus chat*.

DELIMITATIONS BOUND THE SCOPE OF THE STUDY

Before I specify the empirical data collection and data analysis methods that I employed for this study, I shall recount how I arrived at the point of wanting to study systematically the interactions in webcasts plus chat. Such a recounting shall explain how I developed a research question and why I chose symbolic interactionism and constructivist grounded theory as my theoretical and methodological approaches to the study. My objective in retracing my steps is to better enable a reckoning of the methods I chose for data collection and data analysis. In other words, before choosing one method of data collection or data analysis over another, I had to remind myself for what purpose I was choosing them.

My interest in exploring interactions in webcasts plus chat developed quickly when I joined the course as an assistant instructor in 2006. The first interactive webcast of the spring 2006 semester left the veteran instructors and me questioning whether the webcasts were worth the effort and time that so many people expended to make them happen. Facilitating the webcasts was not easy and required the instructors and IT support staff to stay on campus late on webcast days. The emotional intensity of monitoring that many students was exhausting, particularly when we (the instructors) had no idea whether students were learning anything. We had not explicitly tied the webcasts to any learning objectives or outcomes, so we did not know what we expected students to learn

from the experience. As a result, we had no means for measuring the "success" of any webcast, other than having students enter the chat rooms, stay and chat for most or all of the webcast, and exit the chat rooms with some encouraging words, such as these from webcasts in 2006:

> "This was a lot better than writing a paper."
>
> "this was really fun"
>
> "Thanks its been very insightful"

Students' remarks were not always so encouraging, though, such as these from webcasts in 2006:

> "answer my damn quesitons treachers"
>
> "can we go now?"
>
> "if i wanted to, could i just sign on to the chat and then leave it on and go somewhere else next time or should i stayt and watch or does it matter?"

Does it matter? That was what we instructors were asking ourselves about the use of interactive webcasting, and we did not know the answer. We wanted to answer that yes, webcasts do matter, but we could not say why. I was intrigued by the idea of a virtual learning environment in which more than 150 participants could see and hear some people talking about some matter of interest and simultaneously participate in a text-based discussion. At that point I had many questions: How can we make interactive webcasts work better? How will we know if they are working, since we are not even sure what they are? What do our students expect from an interactive webcast? What do we expect? How and to what extent must we try to get students to "behave" differently in the webcast, and what would that look like? Do students come back to the webcasts because they earn points for them, or do students get something from the webcasts that we do not

know about? What might that something be? Why do some students choose not to participate in the webcasts? My immediate sense, having just experienced the phenomenon of a webcast for the first time and then seeing my senior colleagues despair of any learning dividend to come from the webcasts, was to see an opportunity for research. In part my colleagues and I were lamenting the possible loss of something we could not describe, a feeling that the interactive webcasts offered students something they could not get elsewhere, something students found intrinsically valuable in the chaotic exchanges of a webcast that the instructors sensed but had not *studied*.

During the same semester that I began teaching the undergraduate course, I took a graduate course in field and observational methods. Blumer's essay on the methodological position of symbolic interactionism was required reading, and the basic premises of symbolic interactionism provided a plausible explanation for the social phenomena I was observing during the webcasts. Recognizing that the joint actions of participants in webcasts plus chat occur in a minimally-explored and -understood domain of human interaction, I wanted to understand the webcasts beyond my predisposition to view them simply as online classrooms. In order to do that, I needed to reflect on any assumptions about interactive learning that I had as a teacher and pursue, in Blumer's terms, a naturalistic investigation "directed to a given empirical world in its natural, ongoing character instead of to a … substitute for the world in the form of a preset image of it" (p. 46).

Sensitizing concepts

Initiating a naturalistic investigation includes reconciling oneself with the likelihood that one's preconceptions will face challenges in a close and direct study of some social sphere of interaction. We all have ways of making sense of our many encounters by applying categorical terms, or concepts, to them, defining each encounter

by attributes it has in common with other objects we have encountered and defined. The extent to which we as researchers are willing to be flexible or not with concepts helps us, in part, to determine a research path. In a traditional, deductive model of research, we use concepts as "bench marks" for measuring objects of study through hypothesis testing. I could have employed a deductive, quantitative method to measure how changes in the subsystems that comprise an interactive webcast affect the interactions among the participants. By *applying* concepts from socio-technical theory, I could have constructed a hypothesis test and used multivariate analysis to determine if changing the application for the text-based discourse (chat) would affect the number and types of interactions. In doing so, I would have to have some *definitive* conceptual understanding of "types of interactions" before starting the investigation. In a deductive, quantitative study, we move from concept to data. I considered pursuing such a study, but the complexity of defining interaction types, and the difficulties in controlling effects on interactions, other than the effects of a particular subsystem, motivated a more flexible study.

In naturalistic inquiry, we use concepts to suggest ways to begin making sense of objects that we encounter in the empirical world of study. In this way we neither apply nor define concepts before starting an investigation, but rather we reflect on how concepts prior to the study sensitize us, or give us a "general sense of what is relevant" (Blumer, p. 148). Sensitizing concepts provide clues and send us in a general direction, but we subject them to scrutiny along the way, refining them or revising them to fit the empirical instances we encounter in our close and direct study of the empirical world. In a naturalistic, qualitative study, we move from data to concept. As an experienced teacher but a new course instructor, I was immersed in a novel instructional environment about which I could find little research and about which I held conflicting dispositions; for example, I sensed on the one hand a need to implement more control on the chat rooms,

but I argued against one instructor's wanting to limit when students could type in the chats. A symbolic interactionist approach to the webcast "problem" allowed me not only to investigate the phenomenon of the webcast as a social sphere of interaction but also to reflect on my own sensitizing concepts, including my belief that we live in worlds that are physically, socially, and personally constructed; that these worlds are dynamic and mutually constituted; and that we learn best when, according to Rogers, learning is self discovered, personally appropriated, and assimilated to experience (1961, p. 276).

Other theories considered

In conducting a systematic study of webcasts plus chat, I framed the study within the broad conceptual orientation that considers the social aspect of human development and conduct. I looked to theories that shared the same basic assumptions and principles that I did with the hope that they might help distill my thinking about my object of study. To that end, the ecological systems theories of Bronfenbrenner (1979), Williamson (1998), and Kollock and Smith (1996) helped focus my attention on the diversity of the environments in which my study participants are situated. Nardi and O'Day's (1999) book on information ecologies provided ecology as a metaphor for considering technology and its effects on people, and vice versa. The social learning theories of Bandura (1977), Wenger (1998), Hjørland and Albrechtsen (1995), and Vygotsky (1986) focused my attention on the reciprocal nature of meaning building. The social constructionism of Talja, Tuominen, and Savolainen (2005) forced me to revisit my sensitizing concepts and leave open the possibility of new constructs, such as those described by Dresang (1997) in radical change theory. Ultimately, none of these lured me from my desire to practice what Henwood and Pidgeon (2003) call *theoretical agnosticism*, or the resistance to wed oneself to any particular theory or key study (p. 138). I did not want to engage in a process of verifying an existing theory and, in so

doing, miss something in the webcasts plus chat that lay outside the scope of the theory. I wanted the flexibility to examine the full experience of the webcast to see what I could make of it.

Constructivist grounded theory

I chose a grounded theory approach for this study because grounded theory derives from the tradition of symbolic interactionism (Titscher, Meyer, Wodak, & Vetter, 2000) and provides a clear process for exploring the common experiences of individuals in order to explain a specific social sphere or phenomenon, particularly one for which there is little extant research (Charmaz, 2006; Creswell, 2005). A grounded theory approach seeks rich empirical data, describes observed social phenomena, answers fundamental questions about what is happening in the social sphere observed, and develops theoretical categories to understand it.

A constructivist grounded theory approach represents a "philosophical position between the more objectivist, positivist (i.e., more quantitative) stance of Glaser and Strauss and Corbin and postmodern researchers (i.e., those who challenge the importance of methods)" (Creswell, p. 402). Constructivists emphasize the interpretive stance of the researcher throughout the process of the method, from seeing data and analysis as created from shared experiences and relationships with study participants within a social situation to being reflexive about larger contexts that may affect the researcher's interpretations. Constructivists grapple with *how* participants construct meaning in specific situations (more so than *why* they do.) Constructivists understand that data and analysis are provisional products of the research process, that any resulting theory is an interpretive rendering of a "time, place, culture, and situation" (Charmaz, p. 131). In the obverse position, objectivists consider data as real and in the world, waiting to be discovered by a neutral and dispassionate observer who, with a careful application of prescribed methods,

reveals the data and renders an objective interpretation free from the observer's predispositions and unaffected by any context.

Charmaz, who studied under Glaser and Strauss at the University of California, San Francisco, proposes constructivist grounded theory as an alternative to (rather than as an authoritative replacement for) "traditional" grounded theory. Charmaz positions her flexible constructivist approach to grounded theory at one end of a continuum opposite the strongly positivist approach that Glaser and Strauss first propounded, with Strauss and Corbin's revised, procedure-bound approach somewhere between them. Where on that continuum one places any particular grounded theory study depends on "the extent to which its key characteristics conform to one tradition or the other" (Charmaz, p. 130). Given my status as a participant observer already in close personal relationships with many of the participants for over two years prior to the study, particularly with my fellow instructors and the IT staff, I cannot discount the effects that these relationships and my experiences teaching the course have had on my shifting presuppositions and values, and vice versa. For this reason, and because it takes into account the need to adapt one's methods for collecting and analyzing data to suit emerging ideas, constructivist grounded theory furnished an apposite approach for this study.

Delimitations

After four semesters as an instructor for the course, I had become familiar with the processes involved in preparing for and participating in the webcasts plus chat. What I found interesting was how, in their interactions with students and with each other, the instructional staff – instructors, GAs, and UAs – interpreted and manifested their roles as moderators in the chats, in the sense of "moderator" as someone with the power to enforce rules in a forum or discussion. From my experience as a moderator and as a participant observer in the chats, I suspected that "moderating" was a self-determined

practice that was subject to constant reinterpretation from moment to moment during any one chat session and from one interactive webcast to the next during a semester. I determined to employ a constructivist grounded theory process to explore the common experiences of moderators in the webcasts plus chat. I had rich empirical data in the form of logged chat discussions and archived webcast video and audio, my own observations as a participant observer, and access to the instructional staff for evoking their interpretations of the moderator role. I chose to conduct the study during the fall semester 2008, when I would no longer be an instructor for the course. My decision rested on two desires: to relieve the burden of managing a section of the course while I conducted the study, and to ease access to students that my being an instructor for the course would complicate.

My purpose in pursuing the study was to answer fundamental questions about what it meant to be a moderator in an interactive webcast for the particular course described.

EXECUTION OF RESEARCH

Chapter 3: Designing a Study of Moderating Webcasts+Chat

INTERNET COURSE PROVIDES CONTEXT, SITUATION, PHENOMENON, AND QUESTION

Before describing in this section the specific methods I chose for data collection and analysis, I wish to address the context wherein I first formulated the idea for this study. The undergraduate course for which I became an instructor in spring 2006 teaches "basic skills" for using the Internet as a medium for everyday life information use, research, and communication. The course covers electronic mail (email), file transfer (ftp), file compression, and the World Wide Web, specifically the use of search engines and Web publishing. The course also introduces the concepts and histories of Internet governance and ethics. The course began in 1996 as a face-to-face course in a computer lab setting with seating for 12 students. By spring 1998 instructors were accommodating 24 students in the same 12-seat lab. As the course was becoming increasingly popular, IT staff began devising new ways of serving increasing numbers of students virtually, outside the lab's physical space.[9] In summer 1998 students could access streaming media tutorials through the school's network; by fall 1998 students could interact with course materials online via the Web, but students no longer interacted with each other as part of the course. By fall 2003 the school's IT staff had scaled the course up to serve nearly 200 students in four sections, and they had re-introduced social interaction to the course via interactive webcasts.

[9] I gathered the history of the course from five of the school's IT staff, all of whom helped originate the course and remain instrumental in keeping the course going.

The school's IT staff had three objectives in serving so many students. First, school administrators wanted to attract undergraduate students in the course, who represented nearly every undergraduate major on campus, to the school's masters program in information. Second, doctoral students wanted a large "pool" of students that could participate in research studies.[10] Third, the school wanted an "instructor training program" for doctoral students. This last point bears greatly on my study: As instructors for the course, doctoral students helped IT staff create the course materials, which the instructors shared equally among the four sections via the Web. The course materials remained mostly static during a semester; i.e., every student in every section had access to all the same materials for the course, and no single instructor offered course materials that differed from what every other instructor offered. The only opportunities that instructors had to personalize instruction were through one-to-one contact with students via email or instant messaging, or through their roles as hosts for the webcasts or moderators in the webcast chats. By 2006, when I began as an instructor, any understanding of what an interactive webcast should be or do as far as I could discern was tacit knowledge.

That we (instructors and IT staff) as a group, with no shared understanding of how they worked, continued to produce interactive webcasts was for me a situation worth studying. To clarify, there was shared understanding of how the webcasts worked in the sense of how the hardware and software produced images, sound, and discussion fora, but there was no shared understanding of how the interactions among such a diverse group of participants produced something (other than an opportunity for social interaction in the class) that was, for lack of a better term, worthwhile. As instructors took turns hosting

[10] For example, one of the instructors, a doctoral student in the school, used course exit survey questionnaires to conduct a large (n=729) statistical study of students' perceptions of the online course compared to their face-to-face courses.

webcasts, we were free to try out whatever format or methods we thought might produce a worthwhile webcast, but we had only our sometimes mutual and sometimes competing opinions about what was worthwhile. We had begun inviting guests to speak on topics related to the theme of the current module during a webcast – Internet history, for example, or information security – and followed that model for webcasts semester after semester, but we each attempted different means for engaging the guests on screen and for facilitating some engagement between the guest(s) and the students in the chats. To say that as chat moderators we *grappled* for ways to *make the chats work* is a visually-apt metaphor for what became the phenomenon central to this investigation: moderating interactions in webcasts plus chat. My aim in this study was to shed some light on the phenomenon and answer the following question:

What does it mean to be a moderator in an interactive webcast?

DATA COLLECTION AND ANALYSIS DEVELOP AN EMERGING DESIGN

Data collection

I ultimately gathered data from five sources in order to triangulate my exploration of what it means to be a moderator in a webcast+chat: archived webcast media files, typed transcripts of the webcast media files, and plain-text logs of group chats enabled me to reconstruct webcasts and observe firsthand the actions of students, moderators, and guests; students' written reflections of their webcast experiences revealed how students thought about moderators' management of the webcasts without my asking students directly; and interviews conducted with a sample of the instructional staff, IT staff, and webcast guests revealed moderators' thoughts about the act of moderating. Data collection began with securing and transcribing the webcast media files. During the

transcription process, I gathered chat logs and the students' reflections and rendered them in several formats in preparation for analysis. I gathered interview data last.

The five webcasts from the fall 2008 semester reside as archived Real media files on the school's server that is host for the online course. After downloading the media files, I submitted them for transcription and received in return five transcripts as Microsoft Word files, which I corrected using Word and Express Scribe, transcription software that enabled me to listen to each webcast at variable speeds while I made corrections to the transcripts. After completing the transcription process, I had two sources of data from the webcasts, audio/video from the original media files and text from the transcripts.

The group chats reside on the course server as a comma-separated-variables (.csv) file, which enabled importation into and manipulation within a text editor (Notepad), word processor (Microsoft Word), spreadsheet program (Microsoft Excel), database program (Microsoft Access), and qualitative data analysis program (QDA Miner). Each record in the .csv file represents a single contribution to a chat room conversation by a single participant and reveals the specific date and time of the contribution, the contributor's "handle" or identity, and the contributed text. The .csv file comprised 12,527 unique records, from which I created twenty-five transcripts, one for each of the four course section chat rooms and one staff-only chat room that operated during each of the five webcasts

After participating in the webcasts, students posted reflections in response to questions the instructors posted to the course home page. One of the questions posted after the first webcast asked students to reflect on their first webcast experience: *In what way(s), if any, did the webcast experience differ from the expectations you had prior to it?* Eighty-eight responses to the question exist as discussion board posts in the course

management application Blackboard. One of the questions posted after the last webcast asked students to reflect on their webcast experiences throughout the semester: *In what way(s), if any, did the webcasts contribute to your course experience overall? (Or, think of it this way: What, if anything, would you have missed had you not participated in the webcasts?)* Fifty-two responses to the question exist on the course server as students' blog posts in Drupal, the content management system that provided the framework for the course Web site. I copied the 140 responses from their respective sources and rendered them as plain-text files for analysis.

The webcast media files, webcast and chat transcripts, and reflections presented an unmanageable excess of data from which I constructed a sample (following Morse's principles for sampling in grounded theory) to represent the "dimensional scope" and "trajectory" of the shared webcast experience (2007, p. 229). I chose through *purposeful* sampling two of the four sections of the course to compare across all five webcasts. Purposeful sampling, as opposed to random sampling, means that the researcher constructs a sample to meet specific purposes, or sampling criteria, for the study. I chose a sample to accomplish the following:

- *Exploit webcast-chat structure for constant comparison*

  By choosing two of the four sections, I could structurally maintain the webcast-chat format (see Figure 3.1), thereby preserving the scope and trajectory of the semester's interactive webcasts and enabling the constant comparison of data, of developing codes and categories, and of emerging themes within sections (s1, s2) and between sections within or between webcasts (w1, w2, w3, w4, w5).

  Central to grounded theory is the use of constant comparative methods for making analytic distinctions (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Charmaz, 2006). The use of comparative methods in a constructivist grounded theory

study reflects the interactive and interpretive nature of the analysis. By preserving the structure of the webcasts, I was able to compare the actions of individuals within and between chat rooms during a single webcast and longitudinally across multiple webcasts. I could then compare my interpretations of those actions with students' interpretations expressed in their reflections and with the interpretations of staff expressed in interviews.

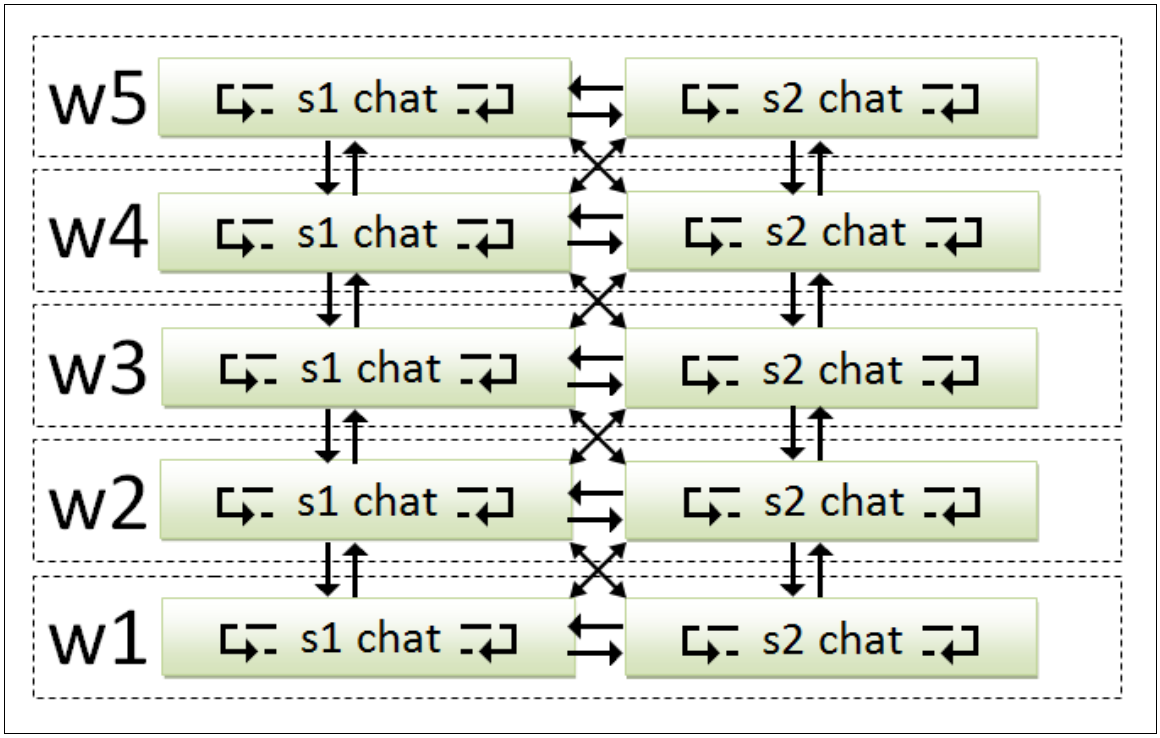

Figure 3.1: Representation of opportunities for comparison between course section chat rooms (s1, s2) and webcasts (w1, w2, w3, w4, w5)

- *Locate experts*

The instructors for the two sections I chose were both visionary course veterans who had each planned, hosted, and moderated multiple interactive webcasts. The instructors for the other two sections were new instructors. I knew from experience that the first semester as an instructor left little time or energy for extraneous

activities, and I wanted informants who were accessible, had reflected on their own experiences in the webcasts, and had developed some general ideas about webcasts from their experience.

- *Maximize variation among moderator-student interactions*

  Because the instructors for the two sections I chose were course veterans, they supervised new UAs and GAs within their course sections' chat rooms. The combination of experienced and inexperienced chat moderators allowed me to document unique variations among chat moderators at different levels of experience as they interacted with each other and with students in the chats (Lincoln & Guba, 1985, p. 200).

  In addition, the two veteran instructors represented variation between them in gender, age, professional experience, comfort level with the computing demands of the course, and temperament that influenced how they interacted with students and with other members of the instructional staff. One of the instructors, a 41-year-old female, had nearly twenty years of experience as a public school teacher and librarian before teaching the course. She added instructional insight and organization to the instructional staff, but she was admittedly "nontechnical" in the use of hypertext for Web design, digital data management, programming, and troubleshooting. She often referred to herself as "the mother hen," and, true to that characterization, she focused her efforts on anticipating problems and being prepared for multiple contingencies. The other instructor, a 28-year-old male, had technical expertise and professional experience in the computer sciences, particularly in programming, Web design, and data management, but he had no teaching experience prior to becoming an instructor for the course. He added a level of computing expertise beyond that of any of the other instructional staff and at least equal to the that of the IT staff. We often referred

to him as "the guru," and, true to that characterization, he focused his efforts on resolving problems and maintaining a sense of calm when computers and programs were not working.

- *Maximize variation among interviewees*

In selecting a sample of people to interview, I wanted some of the most experienced and competent instructional staff, IT staff, and webcast guests who had participated in webcasts during fall 2008 as well as some others who were less experienced. I wanted the most efficient sample I could select. In other words, I wanted a small sample of individuals who could offer me the richest data quickly and easily, so I chose eight people who represented the most variety in their webcast experiences, who were accessible, and who demonstrated the potential to give thoughtful and lively accounts of their experiences. Two of the eight potential interviewees were the instructors, based on their accessibility and differences mentioned above. In addition, I contacted a member of the IT staff, the two UAs and two GAs for the course sections sampled, and one of the webcast guests.

Six of the eight people I contacted, including the two instructors, responded and agreed to meet for face-to-face interviews. To the six people who had agreed to interview I sent a second e-mail message asking, via an attached written consent form (see Appendix B), for their consent to be interviewed and suggesting a time for the interview. All the interviewees consented either by returning their digitally "signed" (as approved by the IRB) consent form as an attachment to an e-mail message or by bringing a signed hard copy to the interview. All the interviewees gave additional written consent (see Appendix C) at the time of the interview for me to record the conversation with a digital audio recorder. All interviews were semi-structured (see Appendix D) but intensive, allowing me to probe interesting responses for an in-depth

exploration of the webcast experience. All the interviews ran longer than 30 minutes, but I paused each interview at 30 minutes to signal that the allotted time I had asked for was up and to ask if the interviewee wished to stop the interview or continue. All but one of the interviewees, who had answered all my questions in less than 31 minutes, agreed to continue. The other five interviews ran from between 45 minutes to 1 hour twenty minutes (in two sessions of 55 minutes and 25 minutes.)

In addition to the two instructors, I interviewed the member of the IT staff I had contacted, the more experienced UA of the two I had contacted, the lesser experienced GA of the two I had contacted, and the webcast guest I had contacted, the only interviewee who was not affiliated with the school.

The member of the IT staff I interviewed had been one of the early instructors for the course, had developed one of the major instructional components, or modules, for the course, and was a regular webcast guest. His historical knowledge of the course made him an invaluable informant. He had moderated chats in both his roles as instructor and guest, and he was a frequent contributor to the staff-only chats. He characterized the moderator role from multiple perspectives.

The UA also characterized the moderator role from multiple perspectives. She had been a student in the course and had participated in the webcasts. Because of her excellent work in the course, including her contributions to the webcast chats, the instructional staff recruited her to be a UA. Fall 2008 was her fourth semester as a UA, so she had moderated 20 chat sessions by the time I interviewed her. She also appeared as a guest panelist during the second webcast in fall 2008, so she had participated in chats as a student, as a UA, and as a guest.

The GA was new to the course in fall 2008, so she added the unique perspective of having just "wended her way" through a semester's webcasts. She had expressed interest in my study of the webcast phenomenon and was a thoughtful informant.

The one "outsider" interviewee appeared as an invited webcast guest for the second time in fall 2008. In her first appearance as a guest in the summer of 2008, she had used the webcast plus chat format very comfortably, monitoring all five chat rooms while talking with students about the university's library outreach programs. She added her insight as someone who had effectively moderated the chats by talking to students via the webcast only, without contributing any text to the chat rooms.

In addition to recording the interviews, I took extensive field notes, which I selectively transcribed while I listened to the recorded interviews using Express Scribe. The process enabled me to transpose my own notes and transcribe selected excerpts from the interviews to bolster my ongoing analysis (or challenge it.) I chose not to transcribe the interviews in full in order to avoid losing analytic momentum during the long transcription process. Were I using interviews as the primary data to begin initial coding and the development of theory, I would have produced complete transcripts from them as I did from the webcast videos. Since I began my analysis by coding the webcast and chat transcripts (in order to construct some understanding of how the processes of producing a webcast and moderating chats worked), I followed Stern's (and Glaser's) admonition to forfeit "worrisome accuracy" and concentrated only on those aspects of the interviews that helped advance the developing theory (Stern, 2007, p. 118).

Data analysis

Data analysis began with my first exposure to the data and moved recursively through the following analytic steps:

▷ [initial coding ↹ focused coding] ↹ [theoretical coding] ↹ [theoretical sampling] ↹ [theory construction/validation] □
[memos] [memos] [memos] [memos]

The first analytic step in a constructivist grounded theory study involves two phases of qualitative coding, or labeling data in order to categorize, summarize, account for, and make an interpretive rendering of them (Charmaz, 2006). In this first step, qualitative codes break data apart into components, concisely name them, and shape an analytic frame upon which to build an analysis. In the first phase, *initial coding*, the researcher adheres closely to the data, focusing on segments of data and applying a provisional language of action to them in an effort to keep the coding grounded in the data. In the second phase, *focused coding*, the researcher chooses from among the most frequent initial codes the ones that make the most analytic sense, or that provide some analytic direction, in order to sort, synthesize, and categorize larger segments of data.

Step 1, Phase 1: Initial coding of webcast 1

The challenge in initial coding is to curb one's tendency to make conceptual leaps or adopt extant theory too early in the analytic process. Charmaz suggests using gerunds to code data initially, which forces the coder to think in immediate terms of action. Note my initial coding of lines of conduct by a single actor, Cookie, a webcast participant in a summer 2008 pilot study. These are excerpts from a single webcast on information security:

responding directly to webcast question

> (4:16:42 PM);cookie:;well i dont like it cause yes all the info is out there, but what u ma want a friend to see on one thing, u dont want them to see it on another

responding directly to webcast question

> (4:26:52 PM);cookie:;we are responsible

connecting personally to discussion point

> (4:46:06 PM);cookie:;that credit report thing happened to a friend of mine, but they failed because they didnt know how many jobs they had had in the past

seeking answer outside webcast discussion

> (4:47:49 PM);cookie:;arent there new computers that have that fingerprint touch to log in

seeking answer outside webcast discussion

> (4:57:25 PM);cookie:;if i have mozilla should i delete IE cause mozilla should be more secure

seeking answer outside webcast discussion

> (4:57:40 PM);cookie:;i cant stop getting advertisments from IE

seeking answer outside webcast discussion

> (4:57:59 PM);cookie:;no, which one is really more secure?

This first phase of coding requires the researcher to keep codes short, simple, and precise; to preserve actions; and to move through the data quickly. The analytic goal of coding is to take what appears routine and familiar and make it new and unfamiliar. In order to do so successfully, the researcher must avoid forcing data into preconceived codes and forcing preconceptions onto the data. In a constructivist grounded theory study, the researcher uses strategies for revealing such preconceptions. One such strategy is to

achieve intimate familiarity with the studied phenomenon in order to avoid sharing the assumptions of the participants in the study. By the time I began my study, I had more than two years of experience organizing, hosting, and moderating webcasts. Because I had become familiar with the many processual and interactional strata of the webcasts plus chat, I could anticipate many of the students' and staff's assumptions, expectations, and behaviors before a webcast. One of my challenges was to recognize when I allowed my familiarity with the experience to direct my coding instead of seeing the data anew.

Another strategy for revealing preconceptions is to recognize sensitizing concepts that frame how the researcher sees and explores the research problem. For example, how did my professional experiences, gained general knowledge, age, gender, history with the course, and worldview create preconceptions about how a learning environment should function? Certainly my worldview that people construct the realities in which they participate framed this study and guided my methodological approach. Another framing concept was my recognition that humans are social animals and that with sociality come tensions that animate social interactions. Such sensitizing concepts provided a starting point for building an analysis, but, in order for me to make analytic headway, I had to allow sensitizing concepts to yield to emerging new perceptions (Bowen, 2006). For example, having been sensitized in my professional experience as a teacher to social structures within "the classroom," I had to wrestle early on in the analysis with my hold on roles and structures in a learning environment, the result of which I reveal in narrating the coding process.

Stage 1a: Initial coding of webcast 1, section 1

Before I could begin coding, I had to devise a way to integrate the separate webcast and chat transcripts into a single document that recreated in text the

synchronicity of the live webcast experience and that I could import easily into QDA Miner, the qualitative data analysis software package I had procured for the study.[11] QDA Miner can import documents in numerous file formats, including those of Microsoft Word and Excel. Ultimately, I used Word to embed one-minute segments of the webcast transcript into the chat transcript in a tabular format (see Illustration 3.1), which simulated the concurrence of the two lines of action – the sequence of actions in the webcast and the sequence of actions in the chat room – while allowing for the varying latency, or delay, that occurred between them. The transmission of the webcast audio and video resulted in greater latency than did the transmission of exchanges in the chat room.

In Illustration 3.1, for example, Drew signals the start of the webcast at 7:06:10 P.M. with a welcome. At 7:06:17, seven seconds into Drew's introduction, Lakesha poses a question. Because of latency between the transmission of the audio/video and Lakesha's reception of it on her computer, she may or may not have known at the time she asked her question that the webcast had started. By the time Zed answers Lakesha eleven seconds later, Masumi is contributing to the webcast, and Lakesha and Zed may just be seeing Drew's introduction (or not.) Drew and the other webcasters, who are monitoring different sections of the chats, will see the chat contributions in near-real time. Before contributing to the webcast nearly at the end of the first webcast minute, Amari has certainly seen Lakesha and Zed's full exchange (because they are in Amari's chat section), but Lakesha and Zed may or may not have heard Amari speak yet. By positioning verbal clues in the webcast with coincidental events in the chat, I was able to

[11] I would not have conceived of pursuing this study without using some qualitative analysis software to help me manage and explore the large number of data involved. Several other doctoral students and I had been in ongoing discussions about which specific qualitative software packages were suitable for use in different kinds of studies when a senior colleague of mine vetted a number of products and shared his reviews. He chose QDA Miner for his critical discourse analysis, which involved coding a large amount of text. Based on his and others' reviews (online), I chose QDA Miner for use in my study. I share the extent to which I found it useful as I narrate the sequence of coding.

approximate the positions of two of the segments and then fill in the remainders, resulting in a very close recreation of the flow of the webcast in text for coding.

06:10▷DREW: Welcome to class everybody. This is our first webcast of the Fall 2008 semester. I am Drew, your instructor, as my chat room knows, cause I just waved to identify myself. I am in my fifth or sixth semester of the course, and up until this point I've been a G.A. and now I'm an A.I, which are all brand new initials. And, to the left of me is: MASUMI: Masumi. I am a Ph.D. candidate in the school. This is my third semester teaching the course, so, yeah, it's been a lot of fun so far. I'm looking forward to this new semester with all of you guys. And I'm going to turn it over to: GEZIM: I am Gezim, and I am a recent graduate of the school, and this is my first semester teaching the class, so I'm excited about all the things we're going to learn from all of you. And this is: AMARI: Amari. I am an instructor for the class. I am a Ph.D. student.		
19:06:17	Lakesha Robbins	do yall see 4 people with apples? is that right?
19:06:28	Zed O'Toole	Those aren't all apples
19:06:33	Zed O'Toole	2 apples
19:06:37	Michael Richards	2 apples
19:06:52	Lakesha Robbins	ohhh my bad. but are we supposed to be able to see each other right now too or no?
19:07:05	Zed O'Toole	No, just them I'm sure.
19:07:06	Ogden Sharpe	no
19:07:09	Michael Richards	you should just c the professors
19:07:10	David Zimmerman	nope
07:10▷I have not reached candidacy yet. And I've been doing this, I think, for maybe five semesters. Tonight, what we're going to talk to you about is kind of an overview of the course and what our expectations are. Tonight's webcast will be different than any other webcast we'll have this semester. Tonight's is a little more informal. You'll see all four of us on camera tonight. Normally our webcast will be one instructor and 1-2 guests that we are interviewing to give you extra information beyond what the module offers, so we won't be reviewing module information but will be enhancing it with our webcast. So please do understand that if this one seems a little chaotic, our first webcast is always a little less organized than our others, because our main goal tonight is to get you accustomed to watching a video and dealing with chat at the same time, and to meet all of us and ask any questions that you may have and get a feel for the course.		
19:07:22	Carter Cousou	No, or at least I'd hope not or I'd need to put on clothes...
19:07:29	Michael Richards	hah

Illustration 3.1: Excerpt from webcast 1, chat section 1 with one-minute segments of the webcast transcript (horizontal gray bars of text) embedded in the chat transcript; all names are pseudonyms.

I began coding the combined webcast plus chat transcript sequentially, line-by-line, adhering closely to the data and parsing the actions in each single contribution to the chat, which resulted in one or more codes per contribution, and in each line of the webcast segments, where often several lines together resulted in a single code or where a single line resulted in more than one code. During this earliest stage of coding I was free to code spontaneously and to revisit and revise codes as I compared bits of interactions. In order to further the analysis beyond the initial coding stage, the researcher employs

strategies to categorize, sort, compare, and integrate codes. Chief among these strategies is memo writing, which serves throughout data collection and analysis to chart relationships in data and between categories. As a strategy, memo writing is not a prescribed procedure but rather any activity for engaging categories as they emerge throughout the method; for freeing the mind to explore ideas, discover implicit meanings in the data, and unpack layers of meaning subsumed in a code or category; and for writing preliminary and provisional notes that will later serve as the core for the final written analysis. QDA Miner provided a structure for categorizing and memo writing from the very beginning of the coding. QDA Miner requires that codes be assigned in categories, so I could not initiate coding without beginning to group codes into categories. QDA Miner also has a comments feature that allows the coder to attach a comment to any code, which enabled me to stop occasionally in the coding and capture ideas to explore later. Categorizing and commenting helped chart an analytic direction early in the analytic process.

The chat log comprised 548 lines, or individual contributions. The webcast transcript comprised 108 individual contributions, or approximately 700 lines of text (depending on the formatting.) Initial coding of the combined approximately 1248 lines of text in webcast 1, chat section 1 resulted in 111 codes in 11 categories with 15 comments (see in Illustration 3.2 the excerpt from webcast 1, chat section 1 as it appeared in QDA Miner with initial coding in the right column).

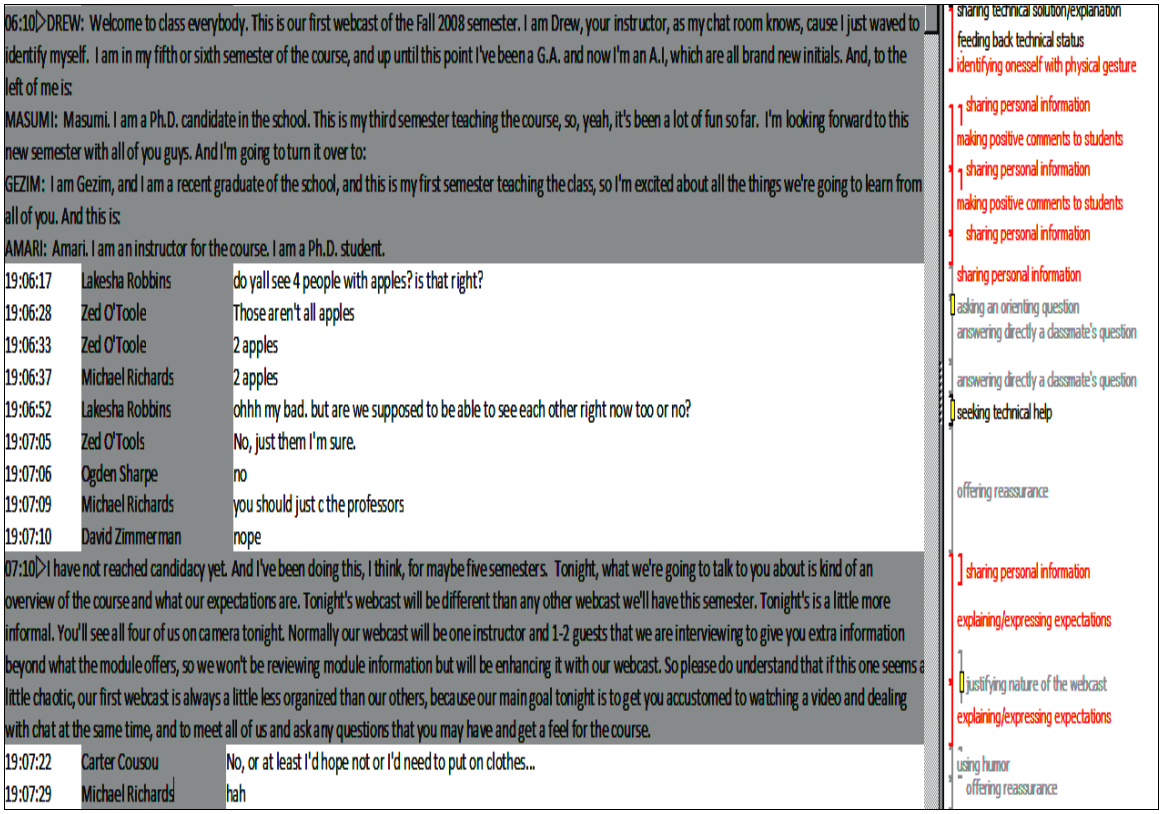

Illustration 3.2: Coded excerpt from webcast 1, chat section 1

Stage 1b: Initial coding of webcast 1, section 2

I continued initial coding with line-by-line coding of the combined webcast plus chat transcript for chat section 2. Since I had already coded the webcast portion of the transcript, I could concentrate on how the chat contributions in the two sections compared, revising codes as needed to make them reflect the data better. The chat section 2 transcript comprised 839 lines. Coding of the approximately 1539 lines of text in webcast 1, chat section 2 resulted in an additional 21 codes, 1 category, and 14 comments for a total of 132 initial codes in 12 categories (see Appendix E) and 29 comments.

Step 1, Phase 2: Focused coding of webcast

In focused coding I chose the most frequent initial codes for synthesis into larger analytic categories. Focused codes from the summer pilot study combined the initial codes listed before (see pp. 47-48) into the broader analytic codes *task-related interacting* and *tangential interacting*:

responding directly to webcast question
connecting personally to discussion point ▷ *task-related interacting*

seeking answer outside webcast discussion ▷ *tangential interacting*

Most assuredly, in coding data from the summer pilot study and in the initial coding of data in the current study, I had preconceived that interactions in an interactive webcast virtual "classroom" would be related to a learning "task" or not. This intention to code according to the nature of interactions as task related or not is evident in the codes from the initial coding of webcast 1. In my effort to focus and thereby reduce the number of codes [at the point of moving from initial coding to focused coding, 41/132 codes had only one or two instances], I rearranged and renamed categories, moving from a typology that emphasized the task-relatedness of interactions to one that emphasized the locus of interactions; e.g., do interactions take place within the webcast, within the chat, or between the two? among or between students, moderators, webcast hosts or guests?

I had two related reasons for reassessing my coding scheme: 1) the term "task" was difficult to operationalize, and 2) some interactions overlapped categories. At first, I thought of "task-related" as describing interactions that are focused on the immediate expectations of the webcasters and moderators, and "non-task" as describing interactions that seemed removed from the expectations of the webcasters and moderators. In coding the first webcast, however, the task/non-task scheme was problematic, because by design

the first webcast was about getting acquainted – with other people, with the concept of the webcast plus chat, and with course expectations. So, in the first webcast, some interactions seemed "non-task," because they seemed detached from the context of what the webcasters were saying, but they were perhaps "task-related" because they represented students' efforts to get acquainted with other students, with moderators, and with the procedures or actions inherent in the environment. I reassigned many of the interactions that involved greeting, welcoming, thanking, leaving, joking, and flirting to a new category, "informal interactions" (per Nardi's definition/discussion, 2005, pp. 109-112.)

I reconceived the core of the typology from the following:

non-task interactions - moderators [9 codes]

non-task interactions - students [27 codes]

task-related interactions [8 codes]

non-task-related webcast interactions [6 codes]

task-related interactions [19 codes]

webcast host/guest interactions [11 codes];

to the following:

intra-chat interactions [15 codes]

intra-moderator [1 code]

intra-student [4 codes]

student-moderator interactions [6 codes]

other [4 codes]

intra-webcast interactions [1 code]

webcast-chat interactions [17 codes].

The category "tangential interactions" remained as a category separate from the core because I maintained some interest in exploring how moderators managed such interactions. My not integrating the category with the other categories reflected my unwillingness to let go of an assumption about students' tangential actions that partly motivated the study in the first place. I would later wrestle with how to integrate tangential interactions as the coding continued.

I merged the two categories labeled *affective responses* into a single category *virtual body language* and merged some of the codes into new codes. Eight codes, for instance, collapsed into the two codes *showing approval* and *showing disapproval*. I thought the use of virtual body language might prove an important element of moderators' actions. I reserved the *virtual body language* category outside the core typology so that I might explore how physical body language and virtual body language differ in their conscious and/or unconscious intent; e.g., how do we choose or not the elements of body language that we exhibit in physical co-presence? Virtual body language is seemingly always a conscious act, since the actor must type the characters on the keyboard, but, in reality, do text-based representations of body language represent certain unconscious states of being? Do I, for example, type a smiley not to consciously depict happiness or a light tone but to unconsciously buffer an anxious state of mind?

I retained the category "technical support," given the nature of the webcast plus chat environment. Many of the interactions focused on problems students were having accessing and viewing the webcast audio/video stream, or changing their handles in the jabber chat client they had chosen to use. Students could not engage in webcast-related interactions until they could see and hear the video in one application and could chat with their fellow students and instructors in another application. Attempts to move "technical talk," which preempted substantive webcast subject-related talk, to a separate

tech_support chat room had limited results: only 12 of the 12,527 contributions to chat took place in the tech-support chat room.

Surprisingly, few coded lines (14) occupied the category "module-related interactions – students," so I did not retain it. Instructors had always opened up the chat rooms early, before the webcasts began, in order for students to find their way into the chat rooms and get oriented. As an instructor I had attempted to turn the practice into course policy by stating in the pre-webcast instructions that we would open the chat rooms fifteen minutes early so that students could get acquainted and ask each other questions about their module work, which was the "main" work for the course. Instructors in fall 2008 maintained the practice, as evidenced by the following section from the general webcast instructions (see Appendix A):

> ***Join early for casual classmate chat***
> We'll open up the chat rooms around 6:45 P.M. for those of you who want to chat a bit before the Webcast begins at 7:00. Feel free to enter the chat rooms and talk with your classmates about the course, **the new decorations** [emphasis theirs], or whatever, until the Webcast starts. The Webcast will get started around 7:00 P.M. and run for forty-five minutes to an hour.

Students used the pre-webcast time only sporadically to talk about the course, and never for any sustained interactions. Students preferred instead to talk about the addition of the beach backdrop (the "new decorations") to the studio rather than about the course work.

In the process of focusing the initial codes from webcast 1, I reduced the number of codes to 62 in 10 categories (see Appendix F). In focusing the codes on the loci of the interactions, I also enabled a means for narrowing the focus of the study. Table 3.1 shows a matrix of the loci of interactions in an interactive webcast plus chat. The shaded area represents the interactions between moderators and students, sometimes between a moderator and a single student (S), between a moderator and an identifiable subset of all

C = chat moderator only **H** = webcast host / chat moderator **G** = webcast guest / chat observer **S/Ss** = student/students **A** = anyone/everyone				Students' Interactions		
				S ↹ S	S ↹ Ss	S ↹ A
Moderators' Interactions	C ↹ C	C ↹ H	C ↹ G	C ↹ S	C ↹ Ss	C ↹ A
		H ↹ H	H↹ G	H ↹ S	H ↹ Ss	H ↹ A
			G ↹ G	G ↹ S	G ↹ Ss	G ↹ A

Table 3.1: Matrix showing the loci of interactions in an interactive webcast plus chat

the students (Ss), as when a moderator addresses a group of students who are carrying on a backchannel discussion, or between a moderator and no particular student or set of students (A), as when a moderator comments generally to the chat room. Everything outside the shaded area, including students' interactions between and among themselves as well as interactions between and among the webcasters or moderators, fell out of the scope of the study. The interactions in the "unshaded" regions of the matrix certainly influenced the actions of the moderators, but they were ancillary to the primary role of the moderators, which was to moderate, in the sense of presiding over and regulating the actions of the students in the webcasts plus chat.

Step 1: Coda

One drawback to coding the chat sections from webcast 1 as separate documents was the difficulty in comparing the actions of one to the other: since I coded the two sections sequentially, first one and then the other, I created temporal distance between spheres of action that had occurred simultaneously. Before continuing to code, I spent an inordinate amount of time figuring out how best to format the webcast 2 transcript and chat section transcripts in a single document to show them as temporally bound, thereby effecting a better recreation of the webcast than I had with the documents from webcast

1. Illustration 3.3 is an excerpt of the result, showing one minute of interaction from webcast 2 in three columns, with the webcast transcript on the left, and the two chat section transcripts in the center and on the right. In this excerpt Jessie, one of the webcast guest panelists for a discussion of information security, discusses his reaction to a podcast on scam baiters[12] that instructors asked students to listen to prior to the webcast.

19:39:00						
JESSIE: Well, it satisfies a very visceral, you know, need which is to exact revenge….it's totally understandable that somebody would want….you know someone who feels strongly that these people are causing others to suffer. And I have no doubt that some of these scams have, you know, drained, you know, people who didn't realize they were scams of significant amounts of money. I don't think people would continue to do them, unless they worked. I think that's an outrage. And I think it's totally understandable that someone would want people who are perpetrating that to suffer. The thing that I would find difficult is … we have such a hard time again knowing about the authenticity … how do we know you're really scamming the scammer who's sending these	19:39:00	Bailey Isaacs	yeah	19:39:01	Ethan Po	HAH
	19:39:02	Uriah Faith	yea	19:39:03	Ethan Po	good one nathan
	19:39:04	Kalam Iyer	yeah	19:39:16	Ulysses Faith	nope. just made him smarter to be able to distinguish who is not buying there scam
	19:39:11	oe4973	yeah	19:39:17	Ethan Po	OOOH
	19:39:11	Fiona Head	Like at Circuit City when they scam people everyday.	19:39:19	Ethan Po	JAMBA JUICE
	19:39:17	mgw94	hahah	19:39:26	Amari	Hi Terence.
	19:39:17	Bianca Krell	lol	19:39:27	Carey	thats true if they got wat they wanted it was a success
	19:39:17	Caleb Young	Their goal was to take time away from the scammers. In the podcast, they stole 106 days that he could have been scamming innocent people.	19:39:29	Ulysses Faith	their scam*

[12] Scam baiting, according to Wikipedia, "is the practice of feigning interest in a fraudulent scheme in order to manipulate a scammer." *http://en.wikipedia.org/wiki/Scam_baiter*

The assigned podcast was an episode from *This American Life* called "Enforcers." From the summary: "Three guys who go by the names Professor So and So, Jojobean and YeaWhatever spend part of each day running elaborate cons on Internet scammers. They consider themselves enforcers of justice, even after they send a man 1400 miles from home, to the least safe place they can bait him: the border of Darfur." *http://www.thislife.org/Radio_Episode.aspx?episode=363*

emails? I mean all you really have is an email address. And basically all they knew about the fate of this guy was whether or not he was responding to whoever…that someone was responding to the emails. And that's a huge stretch to make someone… some anonymous person who may or may not be the person you're going after, go through those things.	19:39:17	Fiona Head	They won't stop if they get a bad sale	19:39:46	Ethan Po	Burned
	19:39:19	oe4973	lol	19:39:53	Bizmo Quaid	Thats true Ulysses, because of that whole Pancho Villa thing afterwards.
	19:39:20	Masumi - Instructor	in my view, if the scammers are still making money, the baiters are just a cost of doing business			
	19:39:23	Tara Canope	do baiters do this for ""fun?"" or do they get paid for it?			
	19:39:29	Miro Quai	from ONE guy this ONE time			
	19:39:30	Kalam Iyer	caleb young is right			
	19:39:38	Miro Quai	its like hes the only scammer in the world			
	19:39:41	Miro Quai	its pretty fail			
	19:39:46	Uriah Faith	yea thatz true but how do we stop this?			
	19:39:47	Sonya N.	how do you know they weren't doing business while away			
	19:39:47	Kalam Iyer	but it work			
	19:39:53	Uriah Faith	sumthin mus be done			
	19:39:55	Sonya N.	he had internet access while he was being baited			
	19:39:59	Bailey Isaacs	lol			
19:40:00						

Illustration 3.3: One-minute excerpt from webcast 2 plus chat sections 1 & 2

By the time I completed the lengthy formatting of the webcast 2 document and imported it successfully into QDA Miner, I was not satisfied with the focused codes I had generated after the initial coding of webcast 1. I wanted to reduce the number of codes

and reconcile the outlying coding categories, such as *informal interactions*, *tangential interactions*, and *technical support*, with the core typology. To make analytic sense of 62 separate codes, I began the next step in the coding process, theoretical coding.

Step 2: Theoretical Coding

The second analytic step in a constructivist grounded theory study involves theoretical coding, which integrates and "lends form" to the focused codes (Charmaz, 2006, p. 63). In this step, qualitative codes reconstruct the data parsed during initial and focused coding in ways that help the researcher clarify the context, conditions, and processes of the studied phenomenon. In the context of the webcast plus chat, moderators were regulating three conditions that explained students' behaviors: students were either *converging*, or coming into the context of the webcast plus chat from the context of some larger social sphere; *attending*, or in the context of the webcast plus chat and functioning as partners to the webcast conveners in the unfolding narrative of the webcast; or *diverging* from the context of the webcast plus chat back into a larger or other social sphere (see Figure 3.2).

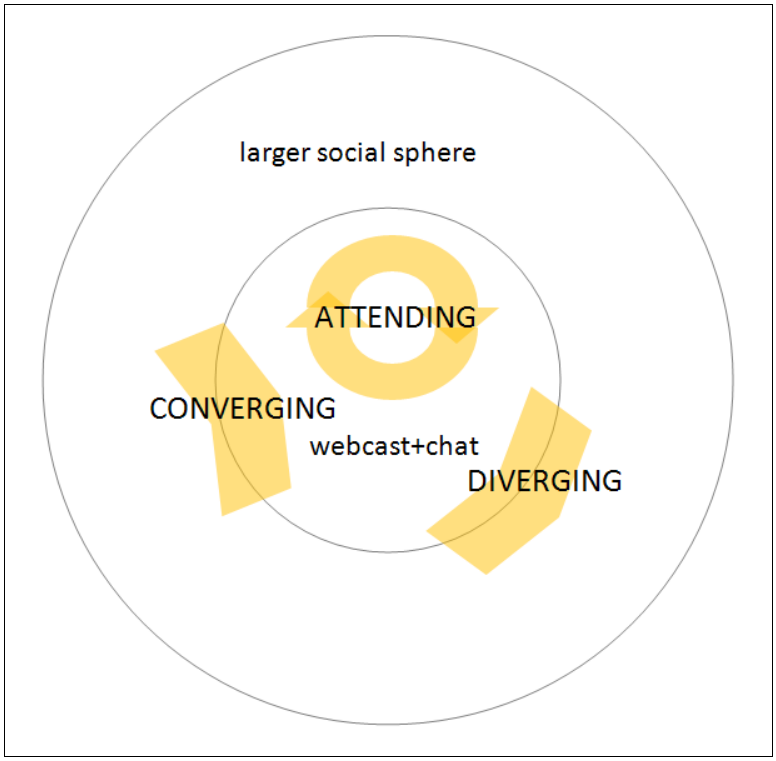

Figure 3.2: Diagram of three conditions of interactive processes in webcast plus chat

By combining the three conditions above with the interactions matrix, I developed a new coding scheme that integrated the previously outlying categories into a new typology (see Appendix G-1). I created a "reserved" coding family, *affections*, to contain what I had previously coded as *virtual body language*. (I reserved them in case they held analytic weight in this study, but I was finding that they held interest for me outside the scope of this study.) Everything else went into the coding family *interacting*, which comprised three *tiers* of analysis:

- A category code for each of the interaction types from the matrix

  [Examples: *Chat Moderator - Student, Host Moderator - Students, …*]

- The three condition codes within each interaction category code

  [*Attending, Converging, Diverging*]

- A list of process descriptions for each condition code, derived from earlier coding

  [Examples: *greeting, smalltalking, orienting, questioning, ...*]

Testing theoretical codes with webcast 2

The combined webcast and chat section transcripts for webcast 2 represented a large number of data in a single document; however, the revised code book enabled me to move relatively quickly through the data. The webcast transcript comprised 136 individual contributions for a total of approximately 700 lines of text. The chat section transcripts comprised 1,057 and 676 lines (each as an individual contribution) respectively. The structure of the new code book allowed me to make quick coding decisions as I worked my way through the data line by line, in one-minute "chunks," coding first a webcast segment, then the adjacent segments from the chat sections. In most cases, I could discern the locus of the interaction quickly, then focus on whether the interaction fit one or none of the conditions. By working through all the data from webcast 2, I effectively tested a coding schema derived from webcast 1 data against a new data set in webcast 2. Other than adding two new codes to the affections coding family, every coded item fit into one of the interaction categories and into one of the conditions subcategories. I then used the new code book to recode the data from webcast 1 so that I could compare the two webcasts using the same coding schema.

QDA Miner provides several means for performing descriptive, comparative, and exploratory analysis of coded data. One easy way to compare data was to assign code colors to coded text, which enabled me to see how converging, attending, and diverging actions "clumped" or not by looking for large blocks of a single color, or isolated bits of color, or alternating patterns of many colors. I also conducted coding frequency analyses

on the codes, the results of which QDA Miner can display as tables or as charts. Comparing periodic coding frequency analyses enabled me to make observations in the data that I might not have made otherwise. For example, Table 3.2 compares the top ten most-frequent codes, listed in descending order by frequency, for webcast 1 data and webcast 2 data. The third column reflects the change in rank of the item in webcast 2 compared to its rank in webcast 1. "Attending, H-S," meaning attending interactions between webcast host moderators and individual students, was ranked as the 7th most frequent code in webcast 1 but the firstmost frequent code in webcast 2, so its rank changed upward by six places. "Diverging, S-S," or diverging interactions between individual students, was the most frequent code in webcast 1 but dropped one spot to 2nd in webcast 2. This is a simple comparative analysis derived from two coding frequency analyses.

Webcast 1	Webcast 2	△ Rank
Diverging, S-S	Attending, H-S	+6
Converging, S-S	Diverging, S-S	-1
Attending, H-Ss	Diverging, S-Ss	+1
Diverging, S-Ss	laughing	+1
laughing	Converging, S-S	-3
Diverging, S-A	Diverging, C-S	+28
Attending, H-S	Attending, S-S	+3
Converging, S-A	Attending, G-Ss	-5
Diverging, H-S	Diverging, S-A	-3
Attending, S-S	Attending, S-Ss	+9

Table 3.2: Change in rank from webcast 1 to webcast 2 of the top ten most frequent codes, in descending order by frequency

Note the change in rank for "Diverging, C-S," or diverging interactions between chat moderators and individual students for webcast 2, which increased in rank by 28 places. The spike in chat moderator actions from webcast 1 to webcast 2 was the result of

changing roles. In webcast 1, both instructors were in the role of host moderator for the "getting acquainted" webcast, so I coded neither instructor as a chat moderator in webcast 1. In webcast 2, both instructors were chat moderators, so chat moderator-student interactions increased markedly in webcast 2. That it was diverging interaction that increased so dramatically was theoretically interesting. I wanted a way to visualize which, if any, interaction-conditions were greater in number than others, and by how much, but to chart them all meant charting 35 separate interaction-condition codes (see Figure 3.3), even after I eliminated codes that applied nowhere in the data. ("Attending" interactions between chat moderators, for example, applied nowhere in the data, so I eliminated it as a code.)

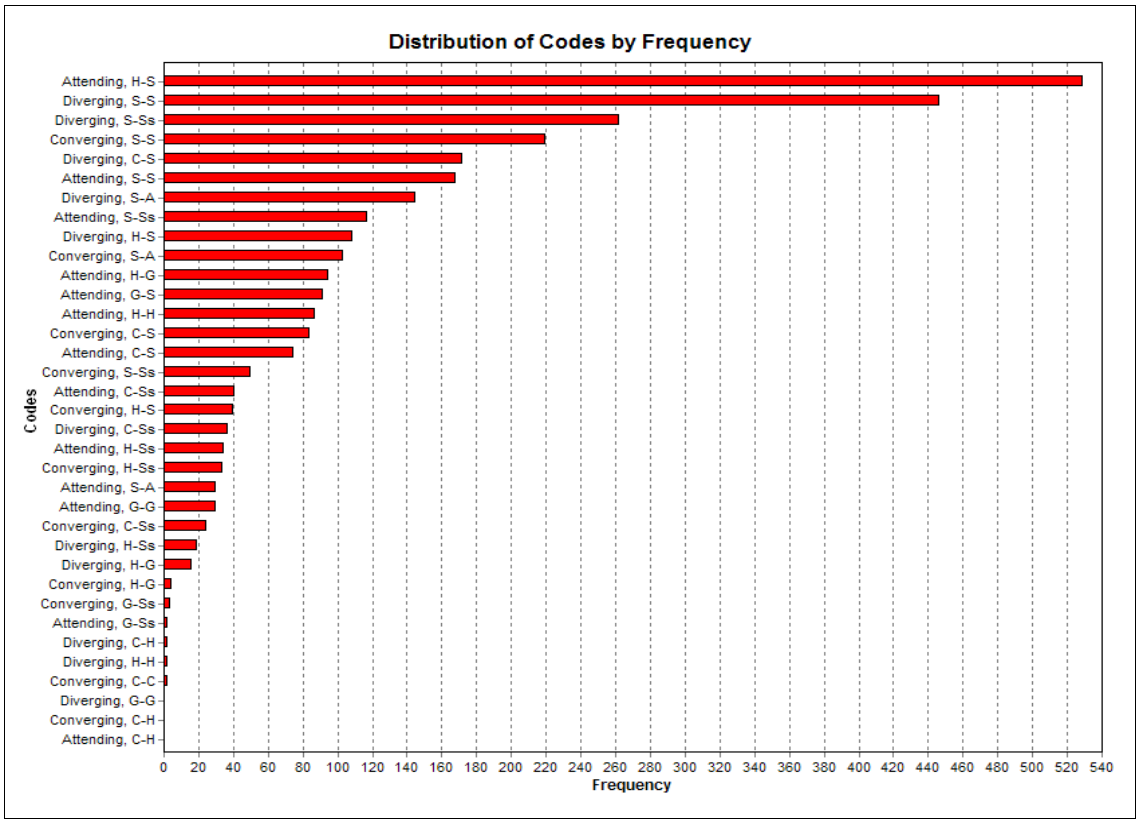

Figure 3.3: Frequency distribution of 35 interaction-condition codes by number of codings

Because visually assimilating that many separate items is difficult, I made another pass through the data specifically to reduce again the number of coding categories and to focus on the various processes that webcast participants used to effect converging, attending, and diverging interactions, which I had listed in QDA Miner as "descriptions" within the condition codes. I consolidated the 15 interaction codes into 3 interaction codes based on where the interactions occurred: in the chat, in the webcast, or between the two, in the webcast+chat. I merged condition categories that were similar, such as the categories for single students and multiple students; e.g, I merged "Diverging, S-Ss" into "Diverging, S-S." In sorting and integrating the lists of process descriptions, I used the comments feature to capture ideas that I would use later in the analysis, and I made a final reduction of the coding schema (see Appendix G-2). The reduced code book reflected the same three tiers that comprised the previous iteration, but the overall schema was much leaner:

- 3 interaction category codes: chat, webcast, and webcast+chat
- 22 condition codes: attending, converging, and diverging codes for each category code
- 33 distinct process descriptions, each of which could apply in more than one category-condition code.

By reducing the overall number of categories, I could produce visual representations of the data to aid in my analysis. Figure 3.4, for example, indicates the pervasiveness of diverging interaction between students more so than Figure 3.3. Nearly one quarter of all coded interactions (854/3431, or 24.89%) were students' diverging interactions in the chat. The only comparably frequent interactions were attending interactions between the webcast host moderators and students in the webcasts+chat,

which accounted for 726 of the 3431 codings, or 21.16%. Students' converging and attending interactions in the chats comprised 10.9% (374/3431) and 8.89% (305/3431) of the codings respectively. Diverging, attending, and converging interactions between chat moderators and students in the chats comprised 6.09% (209/3431), 3.53% (121/3431), and 3.21% (110/3431) of the codings respectively. Note the dispersion of diverging, attending, and converging interactions throughout the top ten most-frequent kinds of interactions.

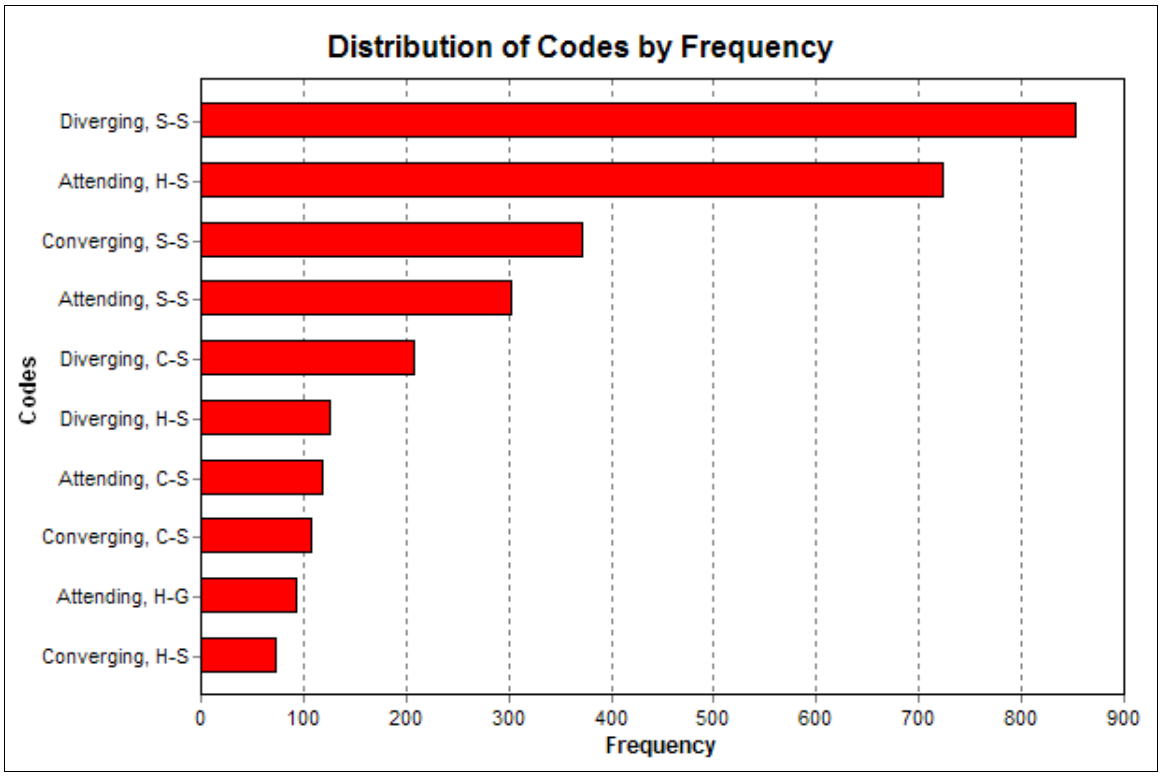

Figure 3.4: Frequency distribution of the top 10 of 22 interaction-condition codes by number of codings (the remaining 12 codes each represents < 1.0% of the total number of codings, with the exception of the code "smiling," which represents 1.4% of the total number of codings)

Distribution of interactions in the interaction category "chat"

The following series of illustrations shows the distribution (by frequency of the codings and by the number of words in the codings) of the interaction conditions in the three interaction categories. Figures 3.5 and 3.6 represent the distribution of interaction conditions in the interaction category "chat." The two illustrations together demonstrate the pervasiveness of diverging interactions in the chats. Not only were more than half (1063/1975, or 53.8%) of the coded interactions in chats diverging interactions, but the total number of words used in diverging interactions was approximately half (6518/13131, or 49.6%) of the total number of words used overall in the chats.

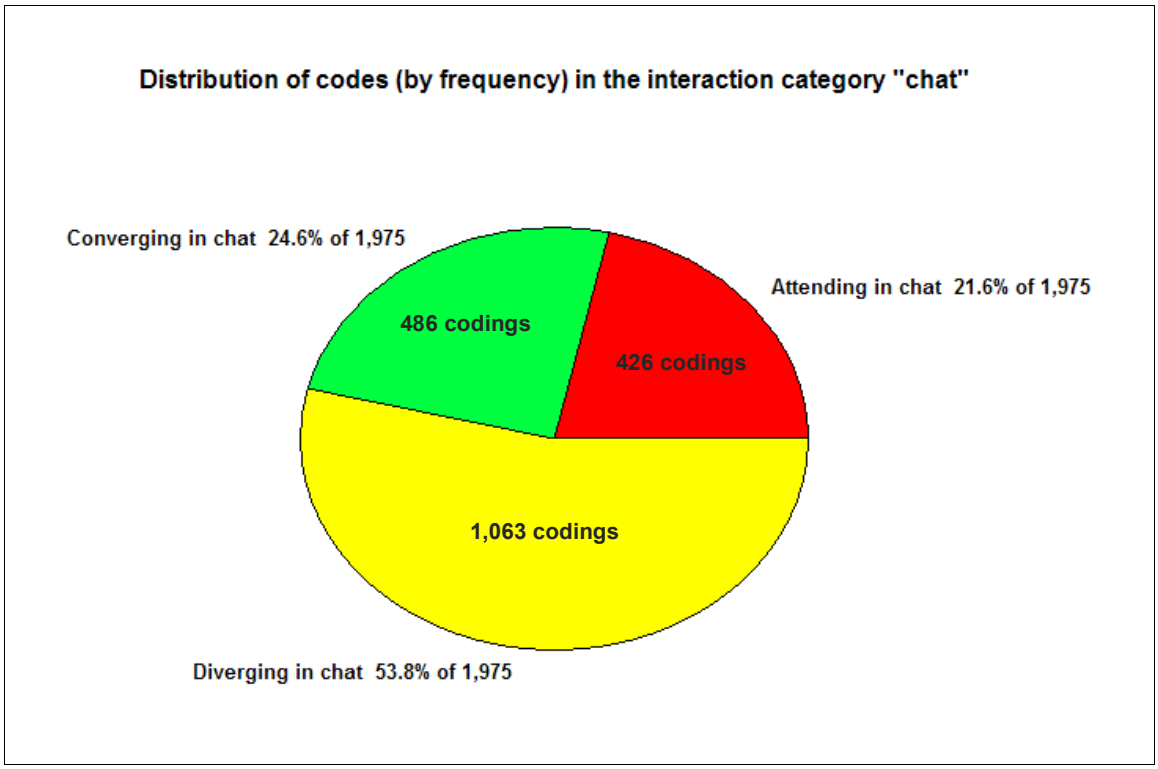

Figure 3.5: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of codings in the interaction category "chat."

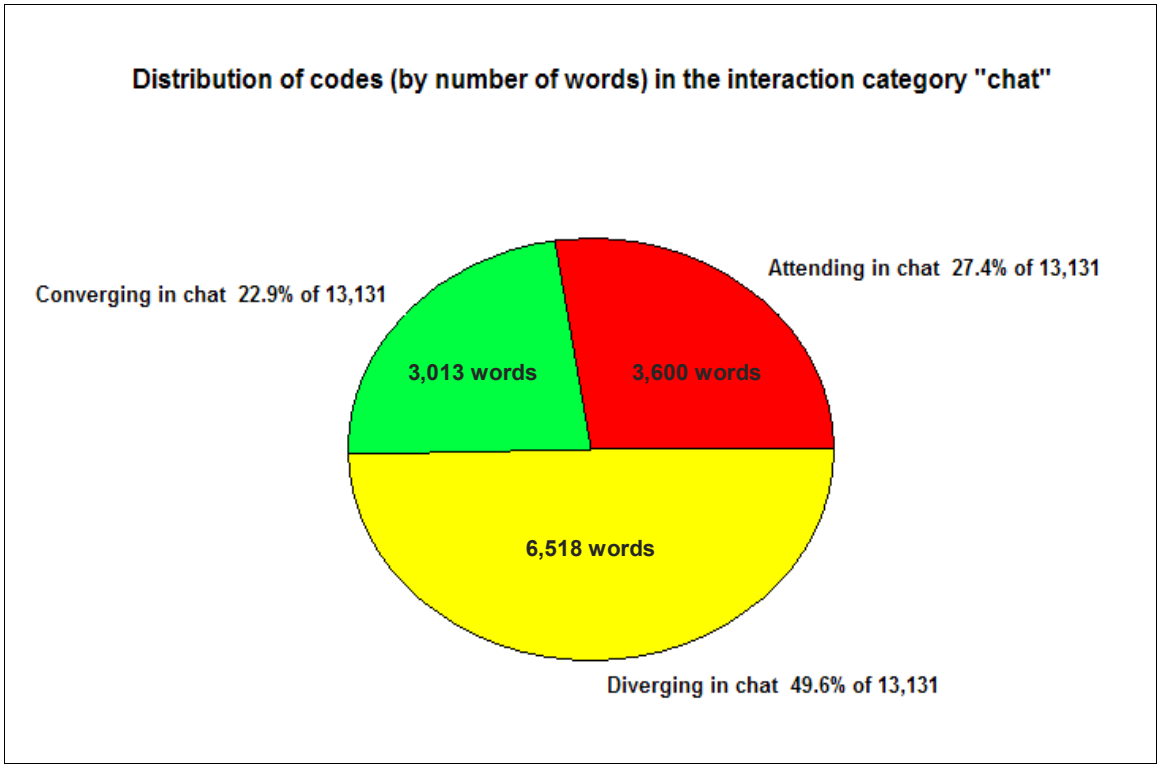

Figure 3.6: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of words used in the interaction category "chat."

Similar charts representing the distribution of interactions in the interaction categories "webcasts" and "webcasts+chat" follow (see Figures 3.7, 3.8, 3.9, and 3.10). The four illustrations together demonstrate the pervasiveness of attending interactions in the webcasts and in the webcasts+chat:

- 85.5% (141/165) of the coded interactions in webcasts were attending interactions
- 93.0% (7,052/7,586) of the words used in webcasts were for attending interactions
- 78.0% (739/948) of the coded interactions in webcasts+chat were attending interactions
- 85.4% (14,740/17,261) of the words put to use in webcasts+chat were for attending interactions.

Distribution of interactions in the interaction category "webcast"

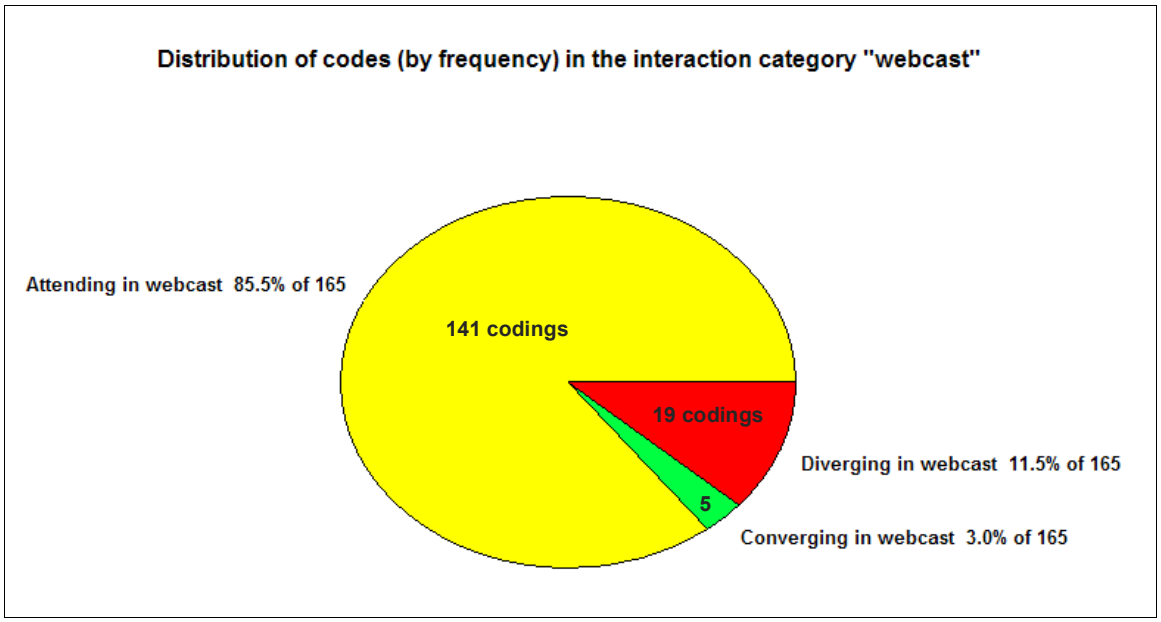

Figure 3.7: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of codings in the interaction category "webcast."

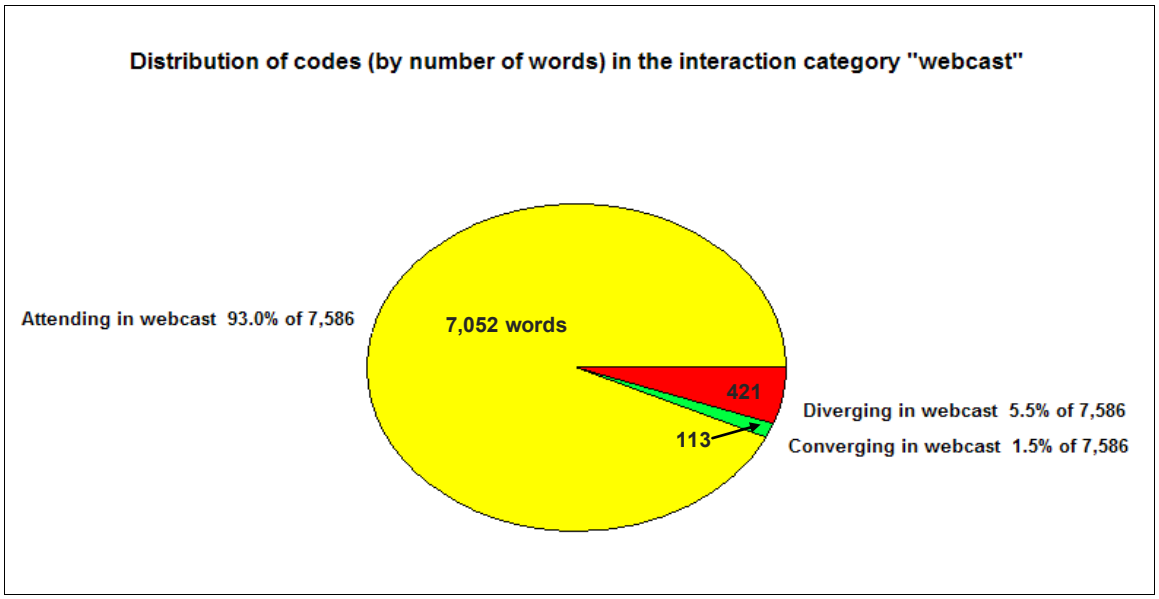

Figure 3.8: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of words used in the interaction category "webcast."

Distribution of interactions in the interaction category "webcast+chat"

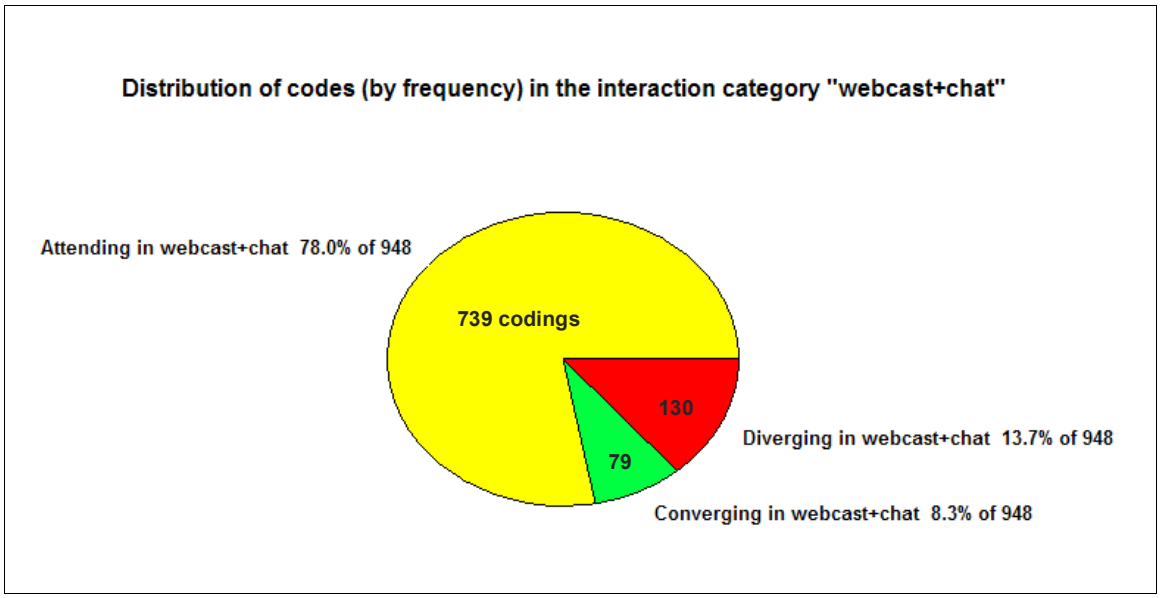

Figure 3.9: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of codings in the interaction category "webcast+chat."

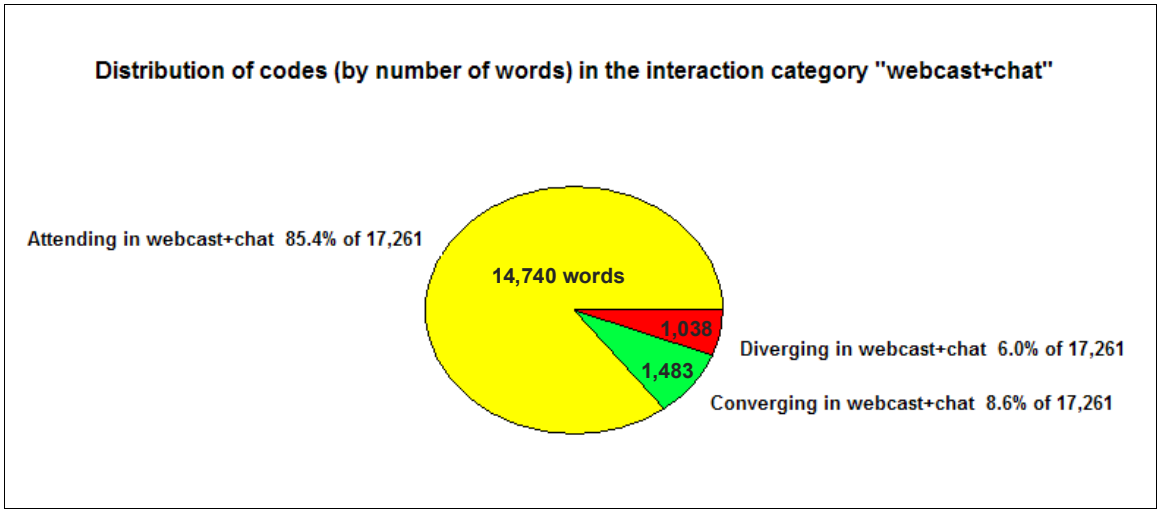

Figure 3.10: Frequency distribution of the 3 interaction-condition codes by percentage of the total number of words used in the interaction category "webcast+chat."

Evident in the preceding pairs of illustrations (3.5-3.10) is that diverging interactions dominate the chats, while attending interactions dominate the webcasts and the webcasts+chat. Figures 3.11 and 3.12 similarly show the relationship of the three interaction categories by frequency of each interaction category and by the number of words in the interaction category.

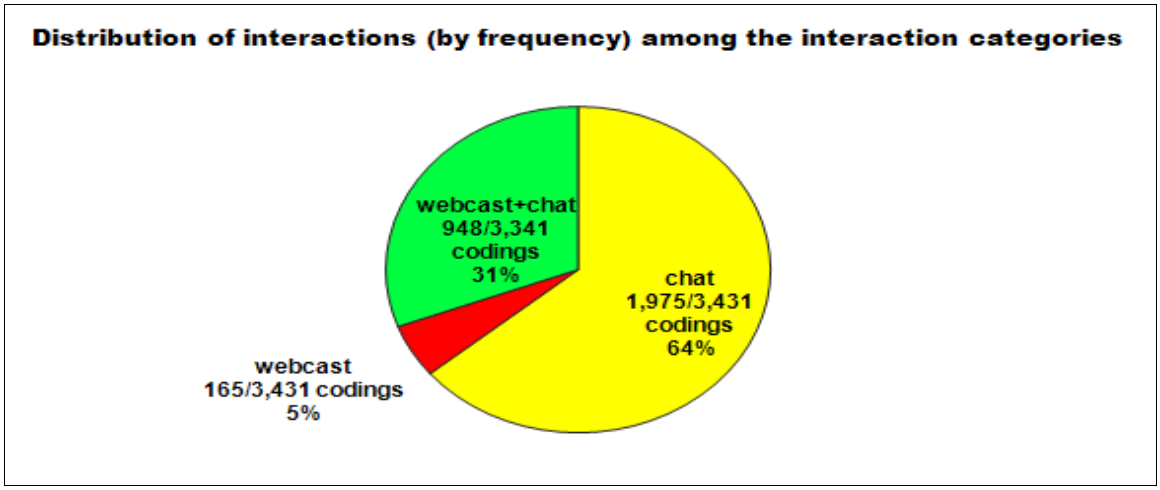

Figure 3.11: Frequency distribution of the 3 interaction categories by percentage of the total number of codings

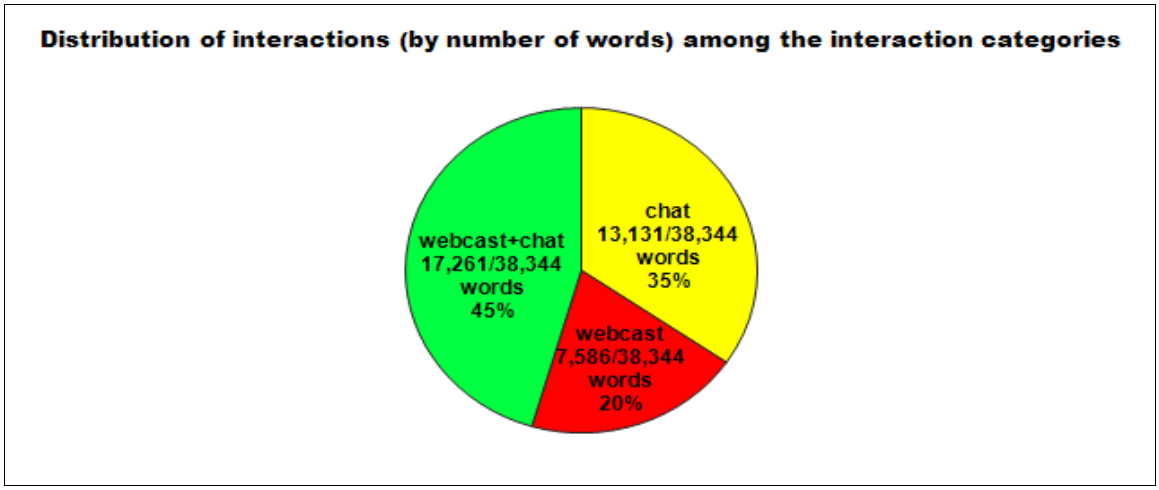

Figure 3.12: Frequency distribution of the 3 interaction categories by percentage of the total number of words used

By using the qualitative data analysis software application QDA Miner for the initial and focused codings of webcasts 1 and 2, I derived a theoretical coding schema of interaction loci-conditions-processes and employed descriptive analyses of the data to gain some analytic footing. Based on the coding schema and the analyses, I concluded that approximately two-thirds (1,975/3,431, or 64%) of all the interactions in the two interactive webcasts studied took place in the chat only (see Figure 3.11), and more than half (1,063/1,975, or 53.8%) of those interactions were diverging interactions (see Figure 3.5). Approximately half (17,261/38,344, or 45%) of all the words logged in the chats and transcribed from the webcasts represent interactions in the webcasts+chat (see Figure 3.12), where 78% (739/948) of the interactions were attending interactions (see Figure 3.9). The descriptive analyses provided a figuratively macroscopic, or large-unit, view of the data that would not have been possible without the small-scale, line-by-line deconstruction and reconstitution of the data through iterative coding.

Processes involved in the interactions

I noted 33 interactive processes in the webcasts that I recorded as "descriptions" in the codes within QDA Miner. In noting these processes, I often used the comments feature in QDA Miner to capture ideas about them at the point in the data where I first noticed them. In this way I produced 64 distinct comments that served as brief memos for developing the analysis. I was able to arrange and print the comments as a plain text file (.txt), as a portable document format file (.pdf), or as a Microsoft Excel spreadsheet file (.xls), which enabled me to sort and display the comments as I needed. For example, my first notice of the interactive process I described as "orienting" occurred early in the first webcast and resulted in the following comment, here represented as a row from the Excel spreadsheet file I created for comments:

#	Date	Category	Group	Comment	Code	Text
1	4/13/2009	w1-1	Indicators of convergence	ORIENTING Student making sure that his experience is the expected experience. Opens with a disarming phrase, "Just out of curiousty [sic]..." so as not to seem too concerned, then asks his clarifying questions to make sure that he should not be seeing the webcast video yet.	Converging, C-S	Just out of curiousity... will the web cast be streaming live? The link you provided should not be working at the moment correct?

By representing the comments in a spreadsheet, I was able to sort the information by any column heading, which enabled me to sort and see all the "Indicators of convergence" together, for example, or see all the comments with the heading "ORIENTING" together.

The processes as I noted them, arranged by condition and category codes, are as follows:

Converging in chat
THANKING
SELF CORRECTING
GREETING
SMALLTALKING
HELPING
REINFORCING
CHEERING
ORIENTING
TECH TALKING
CLARIFYING
HELP SEEKING
CONNECTING

Converging in webcast
QUESTIONING
ANSWERING
EXPLAINING

Converging in webcast+chat
CHEERING
CHECKING
GREETING
DIRECTING
RECONCILING
JUSTIFYING
COORDINATING

Attending in chat
THANKING
ANSWERING
REDIRECTING
INCENTIVIZING
DIRECTING
ADVISING
SANCTIONING

Attending in webcast
QUESTIONING
ANSWERING
COMMENTING
SUGGESTING
CLARIFYING
DEBATING

Attending in webcast+chat
THANKING
QUESTIONING
REDIRECTING
SANCTIONING
REINFORCING_WEBCAST

Diverging in chat
FAREWELLING
FLIRTING
FOLLOWING_A_TANGENT
EXTENDING_A_TANGENT
INITIATING_A_TANGENT
--DECLARING
--SUGGESTING
CLARIFYING
JOKING
SELF CORRECTING
JUSTIFYING

Diverging in webcast
SUGGESTING
JOKING

Diverging in webcast+chat
THANKING
FAREWELLING
JOKING

Figure 3.13 is a graphical representation of the processes, grouped as they are above, by category and condition. Some are unique to a category-condition, where others are not. An item in bold print represents a process that I noted in more than one category-condition, and lines connect processes between categories and conditions. Processes that I noted among students only are struck through and grayed out. All others represent processes that I noted among students and moderators. This charting of the processes involved in webcast interactions illustrates the complexity of an interactive webcast.

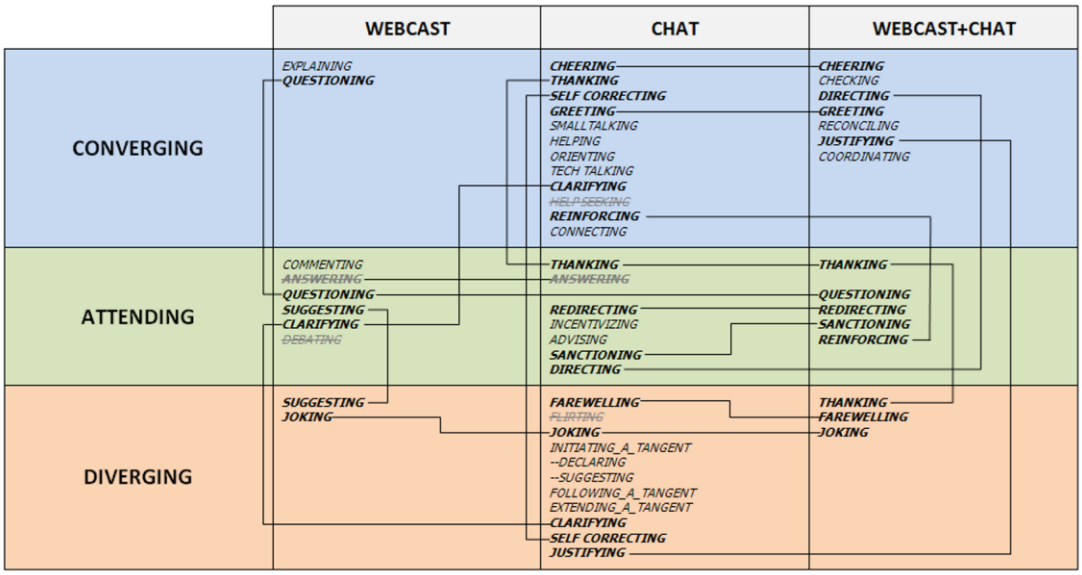

Figure 3.13: Interactive processes of moderators grouped by category and condition. Grayed-out items indicate interactions noted among students only.

In order to diminish the complexity of the many processes moderators employ during webcasts, I began to group similar processes together. After one round, I had reduced the 33 processes to 17 groups, some with a single process and others with multiple processes. Clarifying and orienting went together, for example, but self correcting remained by itself. After two additional rounds, however, I had reduced the

processes to six discrete moderating categories (see Table 3.3), which I outline below:

BONDING	ORIENTATING	GUIDING	TENDING	VALIDATING	BRANCHING
connecting [C] *smalltalking [C]* ***greeting [C]*** ***farewelling [D]*** ***thanking [C,A,D]*** *cheering[C]*	*orienting [C]* ***clarifying [C,A,D]*** ***questioning [C,A]*** *tech talking [C]* *advising [A]* *checking [C]* *explaining [C]* *helping [C]* ***suggesting [A,D]***	*incentivizing [A]* *coordinating [C]* ***directing [C,A]*** ***reinforcing [C,A]*** ***redirecting [A]*** ***sanctioning [A]***	*commenting [A]*	***self correcting [C,D]*** ***justifying [C,D]*** *reconciling [C]*	*initiating a tangent [D]* *following a tangent [D]* *extending a tangent [D]* ***joking [D]***

Table 3.3: Moderators' interactive processes in discrete groupings. Bold items occur in more than one condition code: converging (C), attending (A), and/or diverging (D).

Bonding refers to processes whereby moderators and students get acquainted, ready themselves -- in ways that are minimally committal -- for further communication, and practice social etiquette. Distinctions between processes here are slight, as between connecting and smalltalking, or between greeting and farewelling, but, as a group, bonding processes aid the transition periods of convergence into and final divergence from a webcast:

- *Connecting* (per Nardi, 2005, p. 99) describes interactions that create affinity, or a sense of co-presence, between two groups who share a common virtual space but not a common physical space. They often refer to food or drink, or to physical aspects of one or the other physical spaces webcast participants occupy, in order to reduce the feeling of being remote during a webcast; for example:

18:59:24	EE	I wonder what those orange and pink drinks they are drinking are...
18:59:36	C	Which one is amari
18:59:40	EE	Far right.
18:59:42	MT	haha... i want one... lol
18:59:47	Amari	They are Frutista Freezes from TAco Bell.
18:59:57	B	I hope they don't spill on the computers
18:59:57	EE	Mmmm.

- I purposefully distinguish connecting and *smalltalking*, which mimics the kind of light conversation, or "chitchat," that people engage in to pass time. Smalltalking also creates affinity between remote interactors but without the physical connections; for example:

18:32:22	MT	Hello
18:32:38	Amari	Hi MT. :-)
18:33:00	MT	I'm glad this is going smoothly so far :P
18:34:13	Amari	Yea, me too. If it was already going downhill, I would be sad.
18:35:02	MT	Hehe. I think my computer is going downhill as we talk... I need to go get a copy of windows... I need a reformat. My computer is slower than ever.
18:35:16	Amari	Oh no.

- *Greeting* and *farewelling* include common and original ways of announcing one's entry into and departure from a chat room, from "Hi all!" to "woohoo" to "Bye everybody!" to "releasssssssssed."
- *Thanking* is common throughout the course of a webcast. From "Thank you!" to "gratsi" to "sweet," students thank moderators and other students for answering questions and providing support, moderators thank students for coming to the webcast, and students thank host moderators and guests for putting on a good webcast.
- *Cheering* usually occurs when a student who has had difficulty getting into the chat room finally makes it in. Students and moderators celebrate success through cheering:

19:32:28	EP	I finally got into the chat, yes!
19:32:35	SC	congratulations man!
19:32:37	Amari	Yay! EP.
19:32:46	EG	right on time....::whistle::

Orientating refers to processes whereby moderators help students get acquainted with the webcast situation or chat environment in order to complete the convergence into the social sphere of the webcast plus chat:

- *Orienting* helps students become familiar with new circumstances, perhaps with their first use of chat, or with their use of chat in ways that differ from ways they have used chat before; with their use of a new chat client, or with the Real Player or Quicktime media player; for example:

19:03:45	DQ	can we hear each other?
19:03:48	TE	no.
19:03:51	TE	Lol
19:03:53	DI	No
19:03:53	DQ	o okay
19:03:56	DI	just the professors
19:03:56	DQ	i was just curious
19:04:11	FD	will we be able to hear masumi here?
19:04:34	Heike (GA)	just on the quicktime/real player video
19:04:35	DI	fd u ahve to open real time or quick time
19:04:49	FD	okay thanks

- *Clarifying* occurs frequently in interactive webcasts, because students must split their attention among several streams of information: they listen to and/or watch the live, streaming webcast, read and contribute to a quickly flowing chat conversation, and, often, search the Internet and take telephone calls and block out noise from their immediate physical environments. Because their attention is so split, they often miss bits of important information and ask for clarification; for example:

19:44:33	MT	wait sorry... quizzes r with the modules correct? r the quizzes on black board?
19:44:41	BQ	No, not on blackboard
19:44:48	BQ	On the website I believe.
19:45:02	MT	oh yeah... they said they hate bb
19:45:08	Carson (UA)	The quizes are at the end of each module on the server. Not on Blackboard.

- Moderators use *questioning* to help students focus in the midst of "the fog of webcast." With so much happening at once, moderators often reiterate questions in the chat that were voiced in the webcast, or they use questions to remind students of what someone on the webcast has asked them to do. The following two examples illustrate questioning:

[Drew, in the webcast, asks students about their first use of social networking sites, like Facebook] And did you guys, did you use those before college, or did you start using them once you got to college? [pause]

19:06:00	Amari	before or after starting college?
19:06:03	LH	Before
19:06:04	BQ	After
19:06:06	NC	After
19:06:07	LS	Before

19:25:11	Amari	What was your initial reaction to the podcast today?
19:25:14	FB	Best Prank EVER
19:25:19	Amari	The one on American Life.
19:25:27	CY	Man I missed it

- *Tech talking* describes the frequent chatter among students and instructional staff about the working status of the webcast video/audio streams and, occasionally, the peculiarities of specific jabber chat clients. Moderators often use tech talk to let students know the current status of the webcast feeds, as in the following example:

18:52:38	FH	Am I just supposed to see the quicktime logo?
18:52:48	TE	thats what i see
18:52:54	FH	ok
18:52:58	Masumi - Instructor	Hey all, the video stream should be up now
18:53:00	DI	yea same here
18:53:10	Masumi - Instructor	(at least realplayer)
18:53:18	DI	oh k not quicktime
18:53:19	TE	i am on quicktime
18:53:24	FH	me too
18:53:29	DI	same here
18:54:15	NC	my screen is all green
18:54:16	DI	okay i see masumi

- Moderators occasionally use *advising* when they anticipate potential problems that students may face or questions that students may have, as when Carson, one of the UAs, says to the chat room, "If you have specific questions about situation, like arriving late/ leaving early, participation, etc, email Amari and ask."
- *Checking* is a process moderators occasionally use to gauge the emotional and/or intellectual well-being of the students, as in this example:

19:06:38	Masumi - Instructor	how are we all doing in here
19:06:45	TC	good :)
19:06:46	DI	haha good
19:06:50	BI	pretty good!
19:06:52	EQ	Good
19:06:53	SN	good :)
19:06:54	FH	Great
19:06:56	MQ	Solid
19:06:58	TC	super duper
19:07:01	CY	GoodO:-)

- The pace of a webcast chat is brisk, and individual contributions are usually brief. Sometimes, though, a moderator recognizes the need to extend an answer to a student's question by *explaining*, usually in a short remark or two, the reasoning behind the answer:

18:57:49	MQ	so this room is limited to people in our section :(
18:58:05	DI	i think so
18:58:17	Heike (GA)	It is only people in Masumi's section
18:58:44	FH	why
18:59:25	Heike (GA)	otherwise we'd have a chat room with 150 or more people
18:59:34	Heike (GA)	which would be crazy!

- In *helping* interactions, moderators come to the aid of students who are having some difficulty, most often when the students are receiving no help from their fellow students, as in the following example, where student BI admits feeling lost and receives mostly teasing from her chat mates:

19:15:31	BI	i must be slow or something... does the webcast come up in here or do we need to go somewhere else to see it and then chat in here or what? i feel so lostttt lol
19:15:43	TC	you are definitely lost
19:15:44	DI	u need quicktime or real player
19:15:47	TE	yes your lost BI
19:15:48	Heike (GA)	BI, the webcast is in quicktime or real player
19:15:48	KK	you are missing them juggling torches
19:15:50	KK	and knives
19:15:59	KK	it's a circus, BI, a circus
19:15:59	BI	Nooooo
19:16:22	BI	i have realplayer
19:17:00	Heike (GA)	BI, this link should open it for you in real player http://cobra.xxxxxxx.xxxxxx.edu:8080/ramgen/broadcast/webcast.rm

- *Suggesting* usually emerges when a moderator wishes to share a tip that falls outside the requirements of the course but that might be useful to students, as when Masumi says to his chat room, "hey, if you're using VLC and want to fix the aspect ratio on the video, go to Video > Aspect Ratio > 16:9."

Guiding refers to processes whereby moderators interact with students in order to coax them into a condition of attending to the webcast and chat and maintaining that condition. As a group, these processes generally help students complete converging and keep students from diverging too long or too "far."

- *Incentivizing* is one way moderators try to convince students that they need to participate completely in the webcast, as in this example, where GA Heike uses the required short responses that students complete after the webcasts as motivation for participating throughout the entire webcast:

19:13:27	MH	how often do you need to say throughout the webcast for credit?
19:13:33	MH	*talk
19:13:34	TE	what did she say
19:13:37	DI	the entire time
19:13:39	DI	im assuming

19:13:43	KK	the whooooole thing
19:13:46	KK	it's 3 hours by the way
19:13:50	DI	Liar
19:13:53	DI	Haha
19:13:55	KK	totally serious
19:13:57	Heike (GA)	there will be questions at the end that you need to write a short response to
19:14:02	DI	Seriously
19:14:03	Heike (GA)	And the webcast is about an hour

- *Coordinating* is a strategic process for anticipating changes in the flow of the webcast and alerting students with suggestions for staying engaged, as when Amari says to her chat room, "In a minute, they are going to take a few questions. So, if you have a question about Internet security, post it during the next little break and I'll try to get it to Drew."
- Through *directing*, moderators regulate the activities during the webcast by giving explicit instruction:

19:01:15	Amari	Please open up this website in your browser.
19:01:16	Amari	http://www.thislife.org/Radio_Episode.aspx?sched=1260
19:01:34	Amari	I am not on camera this week. Drew is hosting.
19:02:01	Amari	Okay, listen up - the Webcast is starting. :-)

- *Reinforcing* enables a moderator to restate in the chat what a host moderator or guest has voiced in the webcast, or what someone has stated earlier in the chat that the moderator feels is a particularly salient or engaging point. In the following example, Masumi picks up on students' interest in the opportunity to complete a module on video games for their final project in the class and reinforces the students' interest with a comment:

[Webcast host moderator Frankie has been summarizing the modules] And then our last module is on video games, and that deals with the history and evolution of video games.		
19:18:24	TC	i love mario kart
19:18:29	CY	Video games! YES! :-D
19:18:44	Masumi - Instructor	it's a great module written within the last year (but *lots* of writing)

- Students very often diverge from the webcast and initiate threads of conversation that are completely unrelated to the ongoing webcast. In those cases moderators may try a variety of ways of *redirecting* the students' attention back to the webcast. In the following example GA Banji explicitly redirects students who have gone off in a conversation about Apple products during Amari's discussion of class expectations:

19:22:11	TN	Gotcha
19:22:18	JW	that commercial is a knock off of the apple ones
19:22:26	C	I was just thinkin about that
19:22:27	SC	apple is number one =)
19:22:46	BQ	Ew, I hate apple, but to each his own I suppose.
19:22:55	MT	Lol
19:22:56	JW	SC has every apple product created in his possession
19:23:02	EG	new touches
19:23:03	EG	i want one
19:23:06	SC	yes i do... i was recognized by steve jobs
19:23:07	Banji (GA)	Hey, let's listen to Amari. What she is talking about is very important!

- *Sanctioning* differs from redirecting only in providing a penalty for not re-engaging in the webcast, although moderators rarely "get punitive." In the following example, GA Heike suggests a penalty of sorts if students fail to attend to Amari's tips for how to succeed in the course:

19:19:51	MQ	they have sf4 machines at arcade ufo
19:19:53	DQ	brawl
19:19:55	US	Not saying much
19:20:05	DQ	no wait....zelda - twilight
		[Webcast host moderator Amari offers tips for advice on how to succeed in the course] So start the minute you can. I often give my own students the advice to go the assignments page first in each module and look at the assignments so that when they look at the assignments and the descriptions, if they read the description and the assignment and at sounds like Greek to them, then it's probably a good idea to budget some more time for that particular assignment …
19:20:25	MW	yea sf4 doesn't come out till march 09 >.<
19:20:31	TE	masumi left?
19:20:35	TE	ooh your back
19:20:36	Heike (GA)	Don't miss Amari's instructions - you'll all be crying later!

Tending refers to interactions among students and moderators who are all fully attending to the webcast and chat. The sole process I identified in this category is *commenting*, when moderators seamlessly integrate themselves into the conversation that flows in the "in between" of the webcast and the chat:

19:29:19	CY	I agree with Jessie *[who has been expressing his opinion about scam baiters in the webcast]*
19:29:23	TE	They tried to scam me but I knew about them.. and filed a police report... and turned in thousands of fraud dollars that had RANDOMLY been delivered to me.
19:29:25	FH	It was awesome at first when they pretended to be a church.
19:29:26	Masumi - Instructor	the part that scared me was the nationalistic ""us vs. them"" mentality of the baiters (kind of xenophobic, or even racist?)
19:29:54	BI	yeah
19:30:01	MY	i don't see how anybody could find it funny o_O
19:30:03	MQ	yeah they sounded very cult-like
19:30:15	UF	Dido
19:30:17	FH	Alot of people are xenophobic.
19:30:25	MQ	well its pretty funny, but you shouldnt be dishing out justice because it amuses you
19:30:27	SN	it was rather racisit, what bothered me was that they sent them not to some place where they would be waiting their time but to places where they could be killed
19:30:36	MY	Why is it mostly nigerians who try these scams?
19:30:44	CY	They are not dishing out justice, they are dishing out revenge
19:30:48	DQ	because they have nothing better to do
19:30:48	DQ	??
19:30:54	MY	Hahaha
19:30:56	Heike - GA	and obviously there is a difference between taking someone's money and taking someone's life
19:30:57	BK	Haha
19:31:03	MQ	they feel like they are policing instead of the government

Validating refers to interactions which reflect moderators' attempts to declare the worthiness or legitimacy of the webcast enterprise, often in reaction to what they perceive as shortcomings:

- *Self correcting* is common in the chat interactions, where fast typing results in frequent typographic errors. In the following example, though, Masumi self corrects a slight typo made in an email to students, outside the context of the webcast:

18:54:14	Masumi - Instructor	masumi is here!
18:54:20	Masumi - Instructor	or mausmi, according to my last email to you all

  By doing so, Masumi expresses to the students a sense of attention to detail and care that extends into the management of the webcasts.

- In *justifying*, moderators, particularly those with experience, will apologize for, or make excuses for, what they perceive to be weaknesses of the webcast, such as chaos or disorganization, which may or may not mimic the students' perceptions:

  [Amari, in opening the first webcast]

  > So please do understand that if this one seems a little chaotic, our first webcast is always a little less organized than our others, because our main goal tonight is to get you accustomed to watching a video and dealing with chat at the same time, and to meet all of us and ask any questions that you may have and get a feel for the course.

- *Reconciling* is similar to justifying but adds some conciliatory qualification, as when Drew discusses the potentially chaotic nature of the webcasts in her introductory remarks:

  > …but the one thing about this is when you have a course that fourteen people are working on at a time, it's always evolving and it's always changing. So sometimes it may seem a little chaotic, but it's how we like to learn.

Branching refers to processes whereby moderators enact divergence on their own or in reaction to students. Often moderators seize opportunities in the webcasts to spark some discussion among the students that diverts attention from the webcasts for something moderators might justify as a valuable learning outcome; just as often, though,

moderators stray from the webcast for many of the same reasons students do, because they are bored or distracted:

- *Initiating a tangent* refers to an action whereby a moderator either purposefully or inadvertently starts a conversation thread that diverts students' attention from the webcast. In the following example, instructor Masumi makes an editorial comment on webcast guest Jessie's feelings about Facebook, which Jessie revealed in the webcast conversation about the positive and negative effects of joining social networking sites. Masumi's comment initiates a divergent conversation about the merits of the new Facebook interface, which is tangentially related to the webcast but diverts students' attention away from the webcast topic, the potential effects of using social networking:

DREW: But you didn't like it when old friends connected with you, and you stopped using Facebook.
JESSIE: But I can see – I understand the draw of wanting to be connected and to present yourself and present your connections with other people to the world. And I think that – socially I think that a lot of people's social situation is helped out by

19:07:06	Masumi - Instructor	jessie get's creeped out by facebook
19:07:08	UF	i uv the fb
19:07:10	MH	i liked flickr when i reviewed it, i already started personally using it
19:07:12	DQ	the new fb?
19:07:15	DI	facebook is addictive
19:07:17	UF	Yea
19:07:22	BI	i hate the new facebook
19:07:26	SN	i don't like that fb is open to everyone
19:07:27	BK	fb sux
19:07:28	UF	i lik it
19:07:28	DI	i actually like it
19:07:30	DQ	Thanks
19:07:31	FH	Faceaholic
19:07:32	UF	it so cute
19:07:36	UF	Lol
19:07:41	DI	once u get to used to it, its okay
19:07:43	BK	applications are stupid
19:07:43	TE	so do i the new fb sucksss!

Occasionally a moderator will purposefully initiate a tangent. In the following example, Amari leads a divergent thread related to the webcast, but as the thread persists, it becomes more and more divergent from the webcast. Before Amari asks her tangential question, students are responding to the webcasters' questions about security questions people choose to help them retrieve forgotten passwords. In less than a minute, Amari leads some students in one direction while the webcast discussion moves on to security issues related to device size:

19:56:28	SH	I probably wouldn't accept because I view facebook more of a communication tool for friends and meeting people.
19:56:34	MS	Palin should not have used Yahoo for professional e-mails.
19:56:49	BQ	Yeah, those were REALLY not secure security questions. Lol
19:57:02	Amari	Are you secure?
19:57:06	Amari	Really?
19:57:08	Amari	Are you sure?
19:57:11	IC	im secure
19:57:14	Amari	Am I making you nervous yet?
19:57:17	C	I am secure
19:57:18	KM	Yes
19:57:18	Amari	If not, let me try some more.
19:57:20	BQ	I'm sweating
19:57:21	BQ	Lol
19:57:27	IC	steve where are you
19:57:27	CY	Haha
19:57:30	FB	I'm having second thoughts
19:57:32	TM	im secure
19:57:36	FB	Haha
19:57:37	IC	thats good
19:57:39	MT	*sweating* haha
19:57:40	WN	I am but i havent never really thought about all of those things
19:57:45	FB	im breaking my laptop
19:57:47	C	^ How do Iknow if I am secure
19:57:53	N	Are you secure if you change your password every month?

- *Following a tangent* indicates when a moderator either purposefully or inadvertently picks up on a divergent conversation thread among students and contributes to it in

some way. Here, Masumi, who is helping Amari discuss grading procedures for the course in the webcast, follows a tangent in the chat about the length of his hair, which diverts students' attention from the matters of the webcast:

19:34:06	TE	why does masumi have a buzz cut?
19:34:09	FH	I think we both know ;)
MASUMI: Someone's wondering why the Module One has 140 points instead of 100? That might be a math error on our part. AMARI: No. MASUMI: No? Oh, we don't do that kind of stuff? AMARI: We have each module on its own, just the module part, is 100 points. But then for five of the modules we have a class participation, which you're doing right now		
19:34:35	FH	I'm not answering the buzz cut question.
19:34:41	masumi	surfing :) long hair almost killed me
19:34:56	TE	Woa Mother Hen kind of bit masumis head off.
19:34:56	FD	where do you go surfing?
if you're here, part; and we have a quiz. So each of those is worth 20 points, which adds your extra 40 to the first five modules. Then the later modules, in fact the fifth module, is actually worth 200, I believe, and the sixth module is worth 200, so this all adds up to 1,000 points, and your goal for the semester. It's great to figure out percentage wise whether you have an A or B; and our grades will show you A or B percentage wise, but your goal is to build enough of 1,000 points to get a certain grade, so if you want an A you have to have 899 points or above, or, excuse me, 895 points or above. That's an 89.5 or above. So your whole goal is building points. So if you miss 2 points on something it is certainly not worth freaking out about, but you can't consistently miss 5 points here and 10 points there and expect to be able to keep the highest grade that you might want throughout the course.		
19:35:14	masumi	used to live in hawai'i
19:35:20	FD	that's awesome!!!
19:35:24	MQ	awesome
19:35:29	FD	why'd you leave?
19:35:30	TE	I surf to masumi!
19:35:31	MH	how long have you been here?
19:35:31	DQ	NICE!!
19:35:32	CY	cool!
19:35:35	MQ	i am growing my rocker hair out right now
19:35:36	TE	le'ts go surfing.
19:35:40	FH	yeah
19:35:41	KK	I snowboard...
19:35:42	FH	I second that

- *Extending a tangent* refers to adding something to a divergent conversation thread that seems to have run its course, thereby reviving it or keeping it going longer than it

would have gone among the initial participants. In the example that follows, webcast host moderator Amari dispenses tips for success in the class while the students in the chat discuss their favorite video games. Masumi, co-host moderator in webcast, picks up on the video game thread after reestablishing his network connection and adds the phrase “Hadouken” to the waning thread, referring to an attack move that a character in the video game Street Fighter can use against an opponent:

19:19:09	TE	mario kart... hahaha.
19:19:09	MW	nah...street fighter is the greatest game ever
AMARI: I get to be the "mother hen" at the end here, and talk about the nitty-gritty of the class - the expectations, the grading, and things like that. The main advice that we can give you, and you read it in your orientation, you heard it from other students that have taken this course already - start early, start early, start early, start early - start earlier if you can.		
19:19:11	FH	on the wii
19:19:18	MQ	who is this mw
19:19:21	MQ	and why are you amazing
19:19:27	MW	i know i know
19:19:39	DQ	wait what
19:19:40	DQ	mario kart?
19:19:48	FH	Best game on the wii
19:19:51	MQ	they have sf4 machines at arcade ufo
19:19:53	DQ	brawl
19:19:55	US	Not saying much
19:20:05	DQ	no wait....zelda - twilight
The other advice we can give you is that you really need to read the modules carefully. Particularly when you're reading the how-to parts. Skipping this is not going to work for you. Skipping and scanning works for a lot of classes. I do it myself for a lot of classes. But part of coming to college is being able to figure when skipping and scanning will work and when it won't. And I'm here to tell you that for this class, skipping and scanning will not work. You really have to pay attention to the details. You will notice that if you read through all the directions		
19:20:19	BI	fa shooo
19:20:25	MW	yea sf4 doesn't come out till march 09 >.<
19:20:31	TE	masumi left?
19:20:35	TE	ooh your back
19:20:41	FH	idle..
19:20:44	masumi	Hadouken!
19:20:50	MW	lol

- *Joking* refers to the use of humor and/or sarcasm, which invariably created diverging behavior among the students. Often a moderator must use redirecting when students are joking, but occasionally moderators themselves resort to joking and cause divergence, as when Masumi tosses out a joking question near the end of webcast 2:

19:49:41	Masumi - Instructor	hey...what do you call a scammer that's scamming a scammer who is scamming another scammer?
19:49:54	DQ	Hahaha
19:49:55	DQ	?
19:49:55	LY	a politician
19:49:56	MQ	Masumi
19:49:56	DQ	What
19:50:01	DI	Lol
19:50:01	FH	Baiter
19:50:02	BK	umm..
19:50:06	UF1	conn artist..lol
19:50:11	SD	i need a laffy taffy to figure that one out!
19:50:33	UD	FBI

Through the process of theoretical coding, I integrated the many focused codes into a manageable number of qualitative codes that clarified the context, conditions, and processes involved in moderating webcasts plus chat and that created provisional analytic categories to guide further data collection and analysis. The analytic categories reflected the three tiers that comprised the reduced code book, but in a simpler schema:

- 3 interaction categories: *chat*, *webcast*, and *webcast+chat*
- 3 condition categories: *converging*, *attending*, and *diverging*
- 6 moderating categories: *bonding*, *orientating*, *guiding*, *tending*, *validating*, and *branching*

Step 2: Coda

QDA Miner enabled me to do a great deal with data in the initial stages of data collection and analysis. Without it, or a similar qualitative data analysis software, to help me organize, categorize, explore, describe, and display large amounts of data, I would have reduced the scope of this study to a much greater degree than I did. However, after these first coding steps, QDA Miner became functionally limiting to the study. Perhaps because of the large data arrays I entered, or because of the limits of the computers I used QDA Miner on, scrolling through data became torturously slow, which slowed the analytic process to the point of distraction. Since moving quickly and flexibly through data is one hallmark of grounded theory research, the researcher should jettison anything that interrupts speed, spontaneity, and playfulness with data. In moving on to step three in the study, I put QDA Miner to rest, reserving it as a reference when I needed it but otherwise sampling and exploring further data in other ways.

Step 3: Theoretical Sampling

The third analytic step in a constructivist grounded theory study is to elaborate and refine tentative analytic categories through theoretical sampling, by which the researcher seeks pertinent data to develop emerging theory. Theoretical sampling follows the logic of *abductive reasoning*, which begins with data, seeks theoretical explanations for the data, and returns to data to check the explanations in experience (Charmaz, 2006, pp. 103-104). Reichertz (2007) refers to abductive reasoning as "a state of preparedness for being taken unprepared," "an attitude towards data and towards one's own knowledge: data are to be taken seriously, and the validity of previously developed knowledge is to be queried" (p. 221). Bryant and Charmaz (2007a) place it at the core of grounded theory logic, where "it links empirical observation with imaginative

interpretation, but does so by seeking theoretical accountability through returning to the empirical world" (p. 46). I selected data that allowed me three routes back into the empirical world of webcasts. First, I had webcast transcript data for three more webcasts and chat logs for eleven more chat sessions, including the two course section chats for each of webcasts 3-5 and the staff chat logs from all five webcasts. Second, I had students' reflections, written after their first and last webcasts. Finally, I had course instructional staff who were prepared to share their thoughts about webcasts through intensive interviews. Before I began sampling data from these sources, an explanation for the actions of the moderators emerged from the terms I used to distinguish the condition categories.

Emergence of "the verge"

As I prepared to move into theoretical sampling in order to develop, refine, and illuminate my analytic categories, I revisited the terms I used to describe the three conditions that moderators regulated: converging, attending, and diverging. I found it analytically interesting that diverging, attending, and converging actions ranked, in that order, as the top three most frequent codings of actions in the webcasts plus chat (see Figure 3.4). One might presume that attending between students and host moderators and attending between students and chat moderators would rank high in the interaction-conditions, or that some other combination of the 22 separate interaction-conditions would occupy the top three ranks, but then one purpose of the study is to challenge presumptions. In a further-reduced schema of nine interaction-condition possibilities (see Table 3.4), the top three most frequent codings comprise 74% (2288/3088) of the total codings. That each of the three conditions ended up in the top-three list indicated a lot about what it means to be a moderator: moderators spend a lot of time regulating, or at

least monitoring, divergence and convergence in the chats, and attendance in the "in-between" of the webcast+chat.

	WEBCAST	CHAT	WEBCAST+CHAT	
CONVERGING	0.2% 5	**15.7%** **486**	2.6% 79	18.5% 570
ATTENDING	*4.6%* *141*	13.8% 426	***23.9%*** ***739***	42.3% 1,306
DIVERGING	0.6% 19	***34.4%*** ***1,063***	4.2% 130	39.2% 1,212
	5.4% 165	63.9% 1,975	30.7% 948	100% 3,088

Table 3.4: Frequency of codings in the nine interaction-condition category combinations; italicized figures indicate column highs; bold figures indicate row highs.

Identifying and describing the "in-between" of the webcast+chat presented a challenge when I was developing the interaction categories. One can chart the progress of a chat session easily based on a log. The chat log replicates lines of actions, a number of people in various modes of action and in varying states of concert moving through time from when the chat session opened to when it closed. The same is true for a webcast, based on the archived media, or on the transcript, or on both. The webcast transcript replicates lines of actions from when the webcast started until it stopped. Charting the progress of the "in-between" of the webcast+chat, however, is difficult. No record exists of when the lines of actions in the chat and lines of actions in the webcast converged, intersected, or diverged. Immersion in the chat and webcast data and induction helped me form a mental picture of actions in the webcasts+chat. One can imagine the chat and the

webcast as lines beginning at some distance from each other and moving roughly parallel to one another, occasionally converging and perhaps intersecting, occasionally diverging, but rarely progressing in unison. Moderators are in the position of minding the spaces through which these lines of action wend their ways, attempting to optimize the time the lines intersect in the "in-between" of the webcast+chat but often regulating actions during the time the lines move through bounding spaces where participants act within the scope of the interactive webcast but outside the narrower scope of the webcast+chat, spaces I call *the verge* (see Figure 3.14).

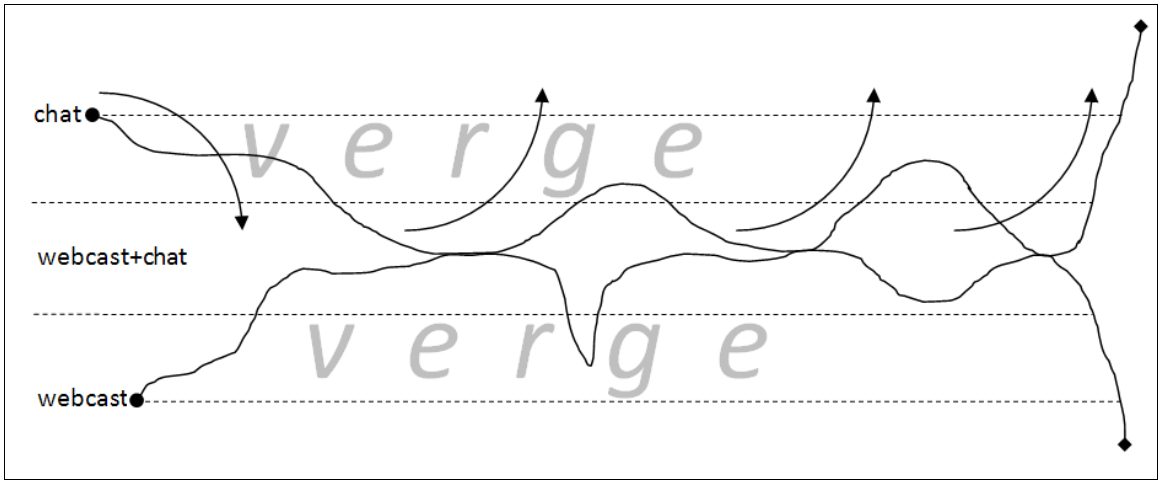

Figure 3.14: Showing lines of action representing a chat session and a simultaneous webcast as they progress, occasionally coming together in the webcast+chat and occasionally separating into the verge. Arrows indicate convergence from a larger social sphere through the verge and into the webcast+chat, and divergence from the webcast+chat through the verge and into the larger social sphere.

The Oxford English Dictionary lists 40 different definitions for the noun "verge," so I winnowed out of those definitions the few that characterize the term as I use it in the context of the webcast+chat. The specific definition from gardening helps us visualize the term as a bounding space: "A narrow grass edging separating a flower border, etc., from a gravel walk. Hence also, an unpaved strip of land, usu. planted with grass, separating a

pedestrian pavement from a road; a (grass-covered) edging to a road," such as the strips of ground cover often separating the sidewalk from the roadway. If one is in the verge, one is neither on the road (with the general traffic of social life) nor on the walk (a narrower path of social action.)

Illustration 3.4: A verge between a roadway and a pedestrian walkway, photo courtesy of mackius at http://www.flickr.com/photos/24453246@N03/ .

The usage of verge that is most common refers to the "utmost limit to which a thing or matter extends; the distinctive line of separation between one subject and another," or "the brink or border of something towards which there is progress or tendency (from without); the point at which something begins," as in this excerpt from a letter, Samuel Johnson to Lord Chesterfield: "I have been pushing on my work..and have brought it, at last, to the verge of publication," (or as in my referring to myself as "being

on the verge of a nervous breakdown" from pushing my own work to the verge of publication.)

Roget's II: The New Thesaurus (3rd ed., 1995) provides succinct definitions, one referring to verge as a physical space, which helps us visualize its meaning in the present sense, and the other referring to verge as a conceptual state of being, which captures its meaning well in the context of the webcast+chat:

> 1. A fairly narrow line or space forming a boundary: border, borderline, brim, brink, edge, edging, fringe, margin, periphery, rim.
> 2. A transitional interval beyond which some new action or different state of affairs is likely to begin or occur: borderline, brink, edge, point, threshold

Wordnet (http://wordnetweb.princeton.edu/perl/webwn?s=verge) provides an even more succinct definition that captures the meaning of verge as I use it in this study: "the limit beyond which something happens or changes."

The concept of moderators being in the situation of minding the verge, minding in the sense of having temporary charge of watching over or caring for something, as in "minding the shop," guided my advancement to theoretical sampling of data. I looked to the data for indications that moderators were bonding, orientating, guiding, tending, validating, or branching in their efforts to "ferry" students from without the chat through the verge unto the webcast+chat or to "patrol" the verge for students making the passage back out of the webcast+chat to some place beyond the verge. I also looked to the data always questioning what I was not seeing, or what I was seeing that did not fit the concept of the verge. For example, one limitation to the chat logs in the form that I received them was that I had no indication in the log of students who had logged in but not contributed anything, so I had no record of students who may have logged in to the chat, attended to the webcast, and logged out without "saying" anything. I also had no sense of students who may have logged in to the chat, occasionally contributed something

between other activities that held their attention wherever they were physically. One of the UAs for the course, Jing, who had been a student in the course before staff recruited her to be a UA, noted in her interview that students' comments that seem addressed to no one in particular in a chat may be from students who have logged into the chat, gone off to make dinner, come back and scrolled up to interject something. She admitted in her interview that even as a UA, she sometimes took phone calls or engaged in other activities at home while she was moderating a chat. My immersion in the chat logs would not reveal such scenarios.

Goal of sampling is theoretical sufficiency

The goal of theoretical sampling is to reach what Glaser calls theoretical saturation but what Dey calls *theoretical sufficiency* (1999, p. 257), which Charmaz describes as "the point at which gathering more data about a theoretical category reveals no new properties nor yields any further theoretical insights about the emerging grounded theory" (2006, p. 189). My goal in sampling was to make maximal use of the extant data I had, the printed chat logs, webcast transcripts, and students' reflections, and to use sampled data from those sources to guide my interviews with staff. As in the early coding stages, I relied on a constant comparison of data from the different substantive sources of data, comparing data from webcasts with data from students' writing with data from interviews.

Sampling of webcast data

In order to sample data from the webcast transcripts and chat logs, I "chunked" the webcast transcripts for webcasts 3-5 into one-minute segments and then integrated them and the chat logs into six relatively seamless documents, one for each of the two

chat sections across three webcasts. Inserting each minute segment of webcast into the chat sections is not precise, given the variable latency between the broadcast and any individual's reception of it, but the six documents captured very closely the relationship between actions in the webcast and actions in the chats.

I also sampled data from the staff chat logs. During every webcast, the instructional staff, including the host moderator(s), chat moderators, IT staff, and, occasionally, guest(s), communicated in a chat session that was separate from the course section chats. In this way, staff carried on back-channel conversations during the webcast in which they commented on the actions in the webcast and chat, asked clarifying questions about points made in the webcast or about course procedures, and "funneled" students' questions from the chats to the host moderator(s), who might have overlooked them or not had access to them.

In poring over the webcast data, I highlighted passages that illustrated the complexities moderators faced in "minding the verge." One of the difficulties of being a host moderator is noting and responding to students' questions in the chats while coordinating the conversation on camera. Chat moderators used the staff chat room to relay students' questions posed in the course section chats to the host moderator, thereby facilitating the intersection of the webcast and chats. Often, however, such tending actions went unnoticed due to branching actions in the staff chat that prevented the host moderator from noticing students' questions. The following excerpt from the webcast 3 staff chat room resulted in the students, whose questions went unanswered, retreating into the verge to carry on their separate conversations, chat moderators vacillating between chatting with students in the course section chat rooms and chatting among themselves in the staff chat room, and the host moderator and guests carrying on their conversation with little attention from their audience. In the excerpt, I have italicized students' questions

that chat moderators have attempted to funnel to the host moderator, but in the live, scrolling chat, the moderators' joking obscured the questions for the host moderator, whose split attention could not pick them out of flowing text:

19:37:08	Amari (Instructor)	*Can you be the president of second life?*
19:39:58	Halushky (UA)	yes-i am president
19:40:03	Evelyn (GA)	*are there ag erestrictions for second life?*
19:40:05	Drew (Instructor)	***identity theft in 2nd life?*
19:40:09	Amari	Halushky for President!
19:40:14	Halushky	hey thats my avatar
19:40:17	Carson (UA)	5 minutes
19:40:19	Halushky	....identity theft
19:40:35	Gezim (Instructor)	*One student says his friend killed someone in SL*
19:40:46	Drew	thank you carson, keeper of the time
19:40:46	Evelyn	....haha
19:41:22	Gezim	--> second life zombies? Ha ha!
19:41:29	Jing (UA)	:o)
19:41:31	Halushky	i wouldnt trust anyone else with the time
19:41:33	Drew	brrraaaaaiiiiiinnnnnnnnnsssssss
19:42:14	Carson	zombie soylent green

Sampling of reflections data

Students from the two course sections I studied wrote 45 reflections after their first webcast experience in response to these three questions:

1. In what ways, if any, did the webcast experience differ from the expectations you had prior to it?
2. In what ways, if any, will you prepare for the next webcast differently?
3. How might this discussion have been more effective or meaningful for you?

I highlighted passages in the reflections that illustrated students' depictions of moving into and out of the verge; for example, student MT's answer to question 3 depicts a

common action in the interactive webcasts, students diverging from their attendance in the webcast+chat because of a slight divergence in the chat:

> I enjoyed all the interaction with all the other students with the instant messaging, but at the same time, I think it would be more effective if the conversations were "on topic". Sometime the conversation went off just a little off topic, and *I'd notice myself reading the conversations with the professors' words going in one ear and out the other.* [italics mine]

I was unable to distinguish course sections in the students' reflections after the last webcast, so I studied the 52 reflections from students in all four course sections who responded to the following question: In what way(s), if any, did the webcasts contribute to your course experience overall? (Or, think of it this way: What, if anything, would you have missed had you not participated in the webcasts?) The question sparked this criticism from a student, who captured the dynamic nature of the webcast experience:

> To be 100% honest, I wish there would have been a little more interaction within the web cast. I felt like it was a lot of listening and not a lot of interaction. This made it hard for me to truly pay attention *throughout* the web cast. [italics mine]

Sampling of interview data

Over the course of one week I interviewed six staff members about their experiences moderating webcasts. During the interviews, I followed an interview protocol (see Appendix D1) that I had developed early in my anticipation of this study but had modified over time. Insights I gained in the early stages of data analysis translated to questions on the interview protocol, particularly to these three question areas:

1. those that asked the interviewees to recount how they thought about their role as moderator and to describe a typical webcast;

2. those that asked the interviewees how they managed students answering other students' questions in the webcast and if they purposefully chose not to respond or react to incidents or divergent threads as a way to manage them;
3. and the question about who had the most power in a webcast.

I designed the interview protocol as a guide for intensive, semi-structured interviews, which meant that I remained active in the interviews and free to choose questions from the protocol out of order, if necessary, or to abandon a question, or to follow the interviewees' departures from my questions if I thought doing so would yield some analytic insight into the experience of moderating. I recorded each interview on a digital voice recorder and hand scribed notes in pencil on the printed interview protocol form. After a week, I listened intently to the recorded interviews while I transcribed my notes, sometimes transcribing pertinent passages for later analysis. See Appendix D2 for an example of a completed "interview notes form" after transcription.

After transcribing the interviews, I created a table in which I summarized, or at least tried to capture the essence of, the responses of the six interviewees for each question. The table enabled me to see very quickly, for example, that their responses to the question about how they perceived their roles as moderators differed "across the board," but that their responses to the question about how they perceived students answering other students' questions in the chats were similar across the board:

	Sol	Amari	Millie	Heike	Jing	Masumi
… role as moderator	works out the same way in spite of planning	non-punitive facilitator	dual role; shifting attention	job was to bring it back	looks for "outliers"	monitor students' emotional well-being
… student answering another student's question… attending or not?	participation	attending: cooperative learning	attending: competing attentions	still engaged	"perfect situation"	attending: "helpful souls"

Table 3.5: Excerpt from a comparison of interview data, summarized from interview transcripts.

Comparing data from different substantive sources

The table above (Table 3.5) served as a sort of situational map, a kind of "analytic exercise" for "opening up" data (Clarke, 2005, p. 83). With data packed in five different substantive sources – the webcast/chat transcripts, the staff chat logs, the students' reflections, the interview notes, and the list of code comments from the earlier analysis – mapping enabled me to unpack the data and move freely through and around it. For example, I used 11" by 17" sheets of paper to list pertinent elements from the students' reflections, grouping them by question and answer elements, drawing lines connecting like and contrasting elements, and highlighting the ones I might want to quote in the analysis. I followed a similar process with the staff chat logs and webcast/chat logs. Since I had put the coding comments into a spreadsheet, I was able to print it and use it in the same way I did the interview notes summary table. These exercises compelled me to read and reread the data many times in multiple formats, which stimulated my thinking in creative ways and helped propel my analysis and transition to the fourth analytic step in a constructivist grounded theory study, theory construction.

Step 4: Theory Construction

The final step in a constructivist grounded theory study is to reconstruct from the data some explicative theory about the studied phenomenon. Up to this point in the process, the researcher shall have avoided allowing extant theories to influence the analysis. At this point, however, the researcher may review existing theory but with a critical approach, resolute that existing concepts must "earn their way into the narrative" (Charmaz, 2006, p. 165). Ultimately, the expression of theory should offer a conceptual analysis of patterned relationships within the studied phenomenon, or conceptualize the studied phenomenon in such a way that others, especially participants in the phenomenon, will come to understand it in abstract terms. In the following chapter, I first construct a narrative to "replay" the webcasts and spotlight the moderators' actions in the light of my analysis and emerging theory, then I offer an explanation of "minding the verge" and of the criteria by which I evaluated the study and its results.

Chapter 4: Building a Theory of Moderating Webcasts+Chat

WEBCASTS HAVE MANY FLAVORS

Throughout the webcasts+chat, the only consistent feature was the interaction between moderators and students, whose interactions varied in a micro-dynamic sense but remained generally stable over time. In other words, the flavor of the webcast itself changed with every new webcast, but, for each new webcast, students and at least one moderator were present without any *explicit* changes to their roles. Roles that moderators and students played, and the conditions of their interactions, changed in each successive moment of interaction, subject to how they individually interpreted the flood of events in each moment. From webcast to webcast, however, students and moderators would go through convergent, attendant, and divergent conditions, would interact in familiar ways, and would exhibit more or less stable dispositions. With each successive webcast, though, came a new format for hosts, guests, and students to interact.

Instructors served as host moderators for the webcasts. Traditionally, all the instructors would appear as co-hosts in the first webcast so that the students could see the instructors on camera, "put faces with names," and chat about the course the way students and instructors do during an orientation to a class. After the first webcast, each instructor would take responsibility for hosting one of the remaining webcasts, with the understanding that each instructor had the freedom to experiment with the format of the webcast she hosted, invite her own guests, and choose pre-webcast assignments, pre-webcast activities, and post-webcast follow-up questions for students' reflections. The following descriptions recount the webcasts chronologically and include my observations of webcast structure and webcast participants' interactions, particularly as they illustrate what it means to be a moderator.

Webcast 1: Getting acquainted

Students and instructional staff anticipate the first webcast of any semester with a mixture of excitement and anxiety. Expectations vary widely, since usually only a few members of the instructional staff have ever conducted or participated in a live webcast.[13] For students, the webcast represents the first time most of them will communicate with each other in the course. For the last four years, instructors have designed the first webcast as a "getting acquainted" opportunity for students to see their instructors together on camera and to interact with their classmates, instructors, GAs, and UAs in the class section chat rooms. It has also served to acquaint students with the software and hardware requirements for participating in the webcasts as well as with some expectations for online social etiquette (see Appendix A under "Webcast Etiquette" and "Join early for casual classmate chat").

For the first webcast of fall 2008 (scheduled for 7:00 P.M. the Tuesday evening of the second full week of the semester), the four instructors designed the webcast to follow a familiar format. The webcast would serve to reinforce the orientation for the course, which comprised sixteen pages on the course Web site that students would have read and responded to as they set up accounts on the school server, learned about the particulars of the course, and prepared for an orientation quiz before beginning the first module of course work. Each instructor would offer some introductory remarks, then, in turn, they would talk about some aspects of the course that, as a group, they had decided to address and had "divvied up" before the webcast, such as the availability of the instructional staff,

[13] Because the instructional staff consists (for the most part) of twelve or more students, some attrition of staff occurs every semester. Doctoral students generally serve as instructors (officially, "assistant instructors"), but, occasionally, school staff or adjuncts serve as instructors. Graduate students in the school, including masters students and doctoral students, serve as graduate teaching assistants (GAs). Students from the university who have completed the course serve as undergraduate teaching assistants (UAs). At the start of every semester, there are always some new members of the instructional staff.

the scope of the course as it fit into the field of information studies, summaries of the modules, and tips for success in the course.

Converging

Per the announcement on the course Web site, the instructors opened up the chat sessions early, earlier than the scheduled time of 6:45. Students began interacting with instructional staff in the chats as early as 6:26. Instructional staff also began interacting in the staff chat room at 6:38. At around 6:55 the video/audio feeds went live. During this casual classmate chat time, leading up to the webcast start time of 7:00, the instructional staff, now in their roles as moderators, monitored their section chats and the staff chat in one computer application, opened media players for the two video streams as IT staff readied equipment for the webcast, and began bonding with and orientating students, who "trickled in," as two of the staff characterized it. Some students sought solutions to problems they were having with a chat client or with a media player, but most students generally sought small talk and reacted to what they saw in the webcast:

18:42:56	b	does anyone know where to change your name that ""local alias"" part i can't seem to find it
18:43:12	MT	when u put in all the log in info, its the handle name
18:43:21	MT	or when you join chat i mean
18:43:35	b	thanks MT
18:46:57	EE	woohoo
18:48:13	**Amari**	Woohoo right back at ya!
18:49:10	FB	finally got it to work
18:49:13	BQ	sup all
18:49:17	C	Hey
18:51:53	EE	How are y'all doing?
18:52:03	BQ	Good, and yourself?
18:52:40	C	How is going
18:52:46	MT	fine thankyou, and u?
18:54:18	C	life is great
18:55:12	C	is everything working out for wit the modules
18:55:35	EE	Yeah, couldn't be better. Watching them on this webcast---crazy.

18:56:27	C	how did you get to it.

Student EE used the neutral descriptor "crazy," perhaps to draw reactions from the other students about this new experience in order to help him frame it. No one reacted directly, however, as the chat continued to flow. It was EE who asked three minutes later, “I wonder what those orange and pink drinks they are drinking are...” – again, trying to get a feel for what the webcast was. Student jmu123 asked the same question more explicitly, which initiated a brief divergence from the webcast that two of the moderators, Amari, between speaking obligations on camera, and Carson, a UA, addressed:

19:10:19	jmu123	r we supposed to be doing anything while watching
19:10:29	EG	Pay attention i'd say, haha
19:10:30	**Amari**	Nope, right now, just listening.
19:10:35	C	no i think so
19:10:43	**Carson**	Hi Guys for this first webcast, just pay attention and ask any questions if you have them.
19:10:46	BQ	jmu, you have to change your handle to your full name
19:11:13	SC	yea jmu you are dumb
19:11:19	SC	i finally got it to workkk
19:11:20	EG	ouch
19:11:28	C	be nice
19:11:34	**Amari**	Nobody is dumb.
19:11:35	SC	i love jmu its ok guys
19:11:41	**Amari**	Yay! I'm glad you got it to work.
19:11:57	jmu123	is it changed?
19:12:01	jmu123	no crap
19:12:04	**Carson**	OK guys, i will only say this once, that language will not fly here. It may be a joke, but no one will tolerate it.

Some students needed reassurance that they could trust what they were seeing:

19:06:17	NT	do yall see 4 people with apples? is that right?
19:06:28	BQ	Those aren't all apples
19:06:33	BQ	2 apples
19:06:37	MT	2 apples
19:06:52	NT	ohhh my bad. but are we supposed to be able to see each other right now too or no?

19:07:05	BQ	No, just them I'm sure.
19:07:06	OU	no
19:07:09	MT	you should just c the professors
19:07:10	FB	nope
19:07:22	EE	No, or at least I'd hope not or I'd need to put on clothes...
19:07:29	MT	hah
19:08:15	**Amari**	No, we cannot see you and do not wish to know your level of clothing. ;-)

In this instance, NT wanted to verify with the other students that what she saw was what the others saw, and that this was what they were supposed to see. At this point she had entered the realm of the webcast, but she was not fully connected until she oriented herself in this new environment. NT also voiced a common preconception among some students that, because students could see the instructor(s) on the screen, students should have been able to see each other, and instructors should have been able to see them. Her chatmates answered her with varying levels of conviction until the instructor, Amari, responded with some reassurance (and some levity.)

New moderators, suddenly immersed in their first webcast experience, sought reassurances of their own. In her first webcast, Heike sought some clarification in the staff chat when a student in her section chat answered another student's question about a post-webcast writing assignment that conflicted with what other students and the instructors were saying:

19:25:03	**Heike**	there is a short writing response to the webcast, right?
19:25:10	Drew	yes
19:25:30	Drew	evelyn is fantastic
19:25:34	Drew	Yay!!
19:25:44	Drew	Rae is kicking webcast butt
19:25:47	Drew	go 27795!
19:25:50	Rae	haha
19:26:00	Evelyn	:-D we're awesome
19:26:00	Rae	I like being the best
19:26:04	Rae	haha
19:28:28	Gezim	I'm totally not paying attention to the staff room
19:28:36	Gezim	Where *are* my priorities??
19:28:53	**Heike**	Can we talk about the writing response to the webcasts?
19:29:35	Sarah	Welcome, Kathleen!
19:30:04	**Heike**	Thank you :)

Heike received no response in the staff chat. Heike's "Thank you :)" in the staff chat was a reaction to Amari, who saw Heike's questions and responded to them verbally in the webcast: "One of our GA's just pointed out something I did not mention yet, and it's important that I do so before we leave. You will have a written response to the webcast tonight. It will be posted later on this evening. The first thing in the morning we'll ask you 2-3 questions and give you instructions on how to respond."

In the course of a few fast minutes, Heike noticed a discrepancy in the quickly-flowing course chat among nineteen students and three moderators, sought clarification for the discrepancy in a separate chat among ten moderators in the staff chat, heard a reply in the webcast, and thanked the answerer with a typed response in the staff chat. Heike discussed this first webcast experience in the interview: "More than four in a chat is too many. It's hard to read the chat and listen to webcast at the same time, especially when the instant messages are going so quickly. With forty students, if only half say something every thirty seconds, that's a lot. I felt like I was always behind, you know." Heike did not have forty students in a chat, but it must have seemed like that many. What a first experience, sitting alone at a computer, yet racing to keep up with so many people!

GAs and UAs moderated the webcast from various areas on campus or from their homes, while the instructors shared the small "studio" on campus. Instructor Masumi, for whom it was a first webcast experience, remembered the "emotional tenor of the evening" as an "adrenaline rush," as the instructors prepared themselves for the webcast at 7:00. With no script, Masumi worried about being able to manage all the different things going on, and that it was going to be "sink or swim." Instructor Amari, a veteran of webcasts in fall 2008, remembered feeling much the same way, off camera, two years before: "I didn't really have any expectations, because I didn't understand what it was

going to be, and my initial reaction after about ten minutes of it was, oh my God, what I have I gotten into?"

Having no expectations before the first webcast, or having one's expectations challenged during the first webcast, is common for students and moderators. Only three of forty-five students who reflected on their first webcast experiences in writing said that the webcast was just as they had expected it to be. No moderator said as much in any of the interviews. Some students reflected on the *anxiety* they felt going into their first webcast:

> I was really confused at first because I thought a webcast needed two webcams, one at each of the parties locations. However, I wasn't told that I needed a webcam which added to my confusion. I wondered how the instructor would be able to see each one of us. Basically, I thought that the professor could see all of us and we could only see her - how complex and unlikely. I was actually kind of worried because I was late signing on with pidgin so I thought [my professor] was planning to yell at me in a way I've never been yelled at before, online. I didn't expect the chatroom format either, but I thoroughly enjoyed chatting with my "onlinemates."

> I was afraid that the webcast would consist of someone basically reading the orientation module to us. I am really glad it was not, and that it was more conversation than reading a script. I was kind of surprised that others were starting random conversations within the chat, which, while funny to read, was distracting and made me feel like I was reading a conversation between a couple of friends at times.

These responses indicate the need for moderators to welcome students through bonding and orientating, but they also indicate an ongoing *tension* that moderators face. The author of the second reflection above used the word "conversation" to illustrate this tension. The student was glad that the webcast was more like a conversation than a lecture, but the student was also surprised that other students were having their own conversations, which were both distracting and entertaining. To be a moderator in a webcast+chat means *striking a balance* in a tension-filled and fluid environment. How, for example, do host moderators keep the webcast conversational while chat moderators

keep the chats from becoming too "casually" conversational? Many of the students' reflections captured their recognition and appreciation of this balance:

> I was glad that the webcast was relatively casual and that the teachers were very colloquial while being very professional at the same time..
>
> [moderators balanced *casual/colloquial* & *professional*]

> I thought I was going to be watching some kind of informational video and not chatting. Instead, I watched the instructors through a live feed and met some of my classmates. It was a lot more informal than I thought it was going to be but it was fun. It was very interesting trying to communicate with each instructor even if the instructor could not see me.
>
> [moderators balance *informational* & *informal*]

> A few semesters ago I had an economics professor who also did webcasts, so my expectations were low. His webcasts were incredibly boring and monotonous, so in regards to his webcasts [this] webcast was a nice change of pace. The staff was jovial and despite the fact that we were discussing matters of the syllabus and the orientation model, they were informative and interesting to listen to.
>
> [moderators balanced *jovial* & *informative* (and *interesting*)

> Going into the webcast, I expected to log in and see one of the instructors lecturing in front of a chalk board. I thought I was going to see each of the 4 professors lecture for about 15 minutes on different topics and then open up the lecture to questions through instant messaging. I also thought I would only be able to see one instructor at a time, not all four simultaneously. I was very surprised and delighted to see all four instructors at the same time. I was also extraordinarily impressed at how well the lecture proceeded, was enhanced, and made to be more relevant than a conventional (non-webcast based) lecture by the introduction of instant messaging. Having the ability to interact with instructors and classmates in real-time during a live lecture provided me with an intellectual thrill I've rarely felt and provided me with a quick, painless way of both expressing important thoughts and addressing relevant concerns. Instant messaging is also, I believe, an ideal medium for communication for people like me, who, out of reserve or shyness, generally don't speak up in large classes. The organized but also impromptu flow of the lecture and its corresponding IM

> components also made it easier to connect to the main points the instructors wished to emphasize.
>
> [moderators balanced *organized* & *impromptu*]

CY, the author of the last response above, also noted another aspect of moderator agency in the webcast, that the experience "was enhanced" and "made to be more relevant" than a "conventional" lecture, leading to "an intellectual thrill." Other students reflected on their surprise at how host moderator actions led to the students' actually enjoying the webcast:

> I thought it would just be one teacher lecturing, and would be pre-recorded. However, I was very surprised to see all four teachers sitting around and answering our questions that we had on Jabber in a live format. I enjoyed the informal classroom experience from the comfort of my chair and my computer.
>
> The webcast was a much better experience than I expected. I thought it was going to be a boring webcast that consisted of a single speaker just talking for 45 minutes, but I liked that there were four because it added some interaction on the video. And each one talked about a different section of material so it didn't get boring hearing one person explain and talk about everything. I also enjoyed the IM chatting among the students, which at times, was quite hilarious to read.
>
> I honestly thought the webcast was going to be a bit boring. I thought I would just be sitting in front of my computer screen watching a boring lecture and reading what other people have to say and then say something here and there. I was surprised to find that the webcast was actually interesting and I enjoyed it. It was a bit difficult though listening to what the instructors were saying and at the same time trying to stay involved in the chat, but I got the hang of it by the end.

One student offered a contrasting view of the webcast, noting that his anxiety about how moderators would control such a large group went away when he realized he could just listen and watch:

> When I heard webcast, I assumed it was going to be a really large video chat between everyone in the class. I had no idea how it was going to be moderated and how it would stay under control. As it got closer to the start, I realized that it was just going to be our professor talking to us while we watched.

Moderators had their own anxieties about how they were going to moderate the webcast. Most had never been told what *exactly* their role as a moderator would be, so most figured it out on their own. UA Jing recalled how her experience as a student in the course did not prepare her to be a moderator. As a student, Jing had not used the UAs or GAs for learning support and was not aware of them during the webcasts. As a result, when instructors recruited her to be a UA for the course, she had no experience or expectations for what it meant to be a moderator. In staff meetings before a webcast, "they" (the instructors) would say, "ok, you need to be in this room and help focus them if they get too distracted." Jing remembered "they" would especially want extra support in the chat room of the instructor on camera, which meant managing a chat room absent a more experienced moderator. Jing felt her role was primarily to "rein 'em in" when they got "off topic," which illustrates, again, the tension that moderators experience in the role. GA Heike said that instructors mentioned the moderator's role briefly in meetings, that if things got off topic or a little rowdy, it was the moderator's job to "bring it back." Heike remembered being told to "watch for it" but not how to "handle it," so she didn't know whether to contact students in the group chat or individually, via a personal one-on-one instant message, for example.

In order to learn how to moderate, Heike watched the instructors and other GAs to learn how to deal with "inappropriate behavior." Heike, especially in the first semester as a moderator, did not "have a good feel for" moderating or for how involved to be in the chat, had no contact with the instructor, and felt like she was "shooting from the hip." In the second semester, Heike "started getting a feel for it" and "loosened up." The instructor with whom Heike worked "would let the chat run and make a little comment here and there. Since he didn't talk much, I didn't. He was giving the students, saying, 'This is your chat room.' That was kinda the sense I got, is that it was more for the

students to chat rather than us to, kinda, you know, really tightly control the whole process."

How to balance one's "control" of student participation in the webcasts was an ongoing tension that moderators felt. Amari said that the moderator role went through "several iterations over time," from the first webcast to the most recent one:

> I was overwhelmed and probably only answered questions. I think I only so-called corrected things that were egregious, like totally pulling people off topic. Then I went through a time where I interjected a lot of information, because I tend to cater to our most basic students. I was always trying to inject something to pull that reluctant student along and that will give the overly distracting ones something else to distract on that's actually on topic. Then I decided to try to be the ghost on the wall and not interact at all. Classroom behavior didn't vary based on that approach. Students were most appreciative of the extra information. Now, I figure out non-punitive, more facilitative ways to pull their attention back, so sometimes it's providing a piece of related information, sometimes it's giving them a piece of trivia about that information that's being presented, sometimes it's reiterating a question that the, we found, I think all of us have found that reiterating the question that's been asked on screen is very helpful, because our students often miss it, some because they're not attentive but some because they're in the same boat as I was. They miss the stuff on the chat, or they miss the stuff on the video at any given moment, so I think what I've settled into after however many semesters is kind of that extra information and reiterative, facilitating type of pushing either by questions or raise your hand if, or, um, if I find that, sometimes you can, it's really weird, because even in a chat sometimes you can feel the rustle of getting of topic. You can just, there's suddenly less chatter at all, and you also look at the screen, and you listen to the person, and you know they're talking over the heads of your students, you know they've just entered a jargon-y world where your students can't follow, um, and so at those times … I would bet you would find an increase in chatter from me, because I feel it slipping away.

Sol, who helped develop the course as an instructor and now is a regular guest on webcasts, recalled how different instructors over the years had tried to establish a model for getting students "into" the webcast when he was a guest. Ultimately, he said, it did not matter, because the dynamism of the chats overruled any imposed structure:

> Different semesters have done it slightly differently, so, um, usually it ends up working out the same way, but sometimes people wanted to have like a more structured discussion, so sometimes people say, ok, I want to have a list of topics

> beforehand, and I want to really schedule every part of the moderation, and students aren't going to be allowed to ask a question until then, and so on and so on. Um, I can only recall that actually happening maybe once. And even in that structured way it didn't actually end up working out that way, because students were interested in other things, and we kind of moved on like that.

Sol's observation underscores the challenge moderators face as they strive to help students converge, or move through a state of accelerated flux and uncertainty to a more stable state of attending to the webcast+chat.

Attending

Attending is the optimal condition for a webcast+chat. So much activity occurs in the chats that it makes sense in some circumstances to have a chat without a webcast, for whatever objective the chat conveners have for convening a chat. Participants can communicate via text in a chat without the distraction of a video in another area of their computer screens. The same is true for a webcast without a chat, and many people "attend" webcasts or webinars, where they sit at their computers and watch whatever programming the webcast conveners have to show, without the distraction of a chat. If, however, you have a webcast and a chat coincidentally, as instructors in the course did, then it makes sense to coordinate the actions in the webcast with the actions in the chat, so that participants engage each other in some shared experience. Otherwise, why do them together?

After the first webcast, students reflected on their need to prepare differently for subsequent webcasts in order to achieve or maintain a condition of attending. Converging and readying oneself for attending to the webcast+chat requires time and concentration, as the following reflections indicate:

> The only thing I believe I can fix for the next webcast is to allow myself more time to sign in and get situated.

> For the next webcast I will probably allow myself to be in a more quiet setting where I will be able to concentrate better.
>
> For my future webcasts, I will try to make sure I do not have any other programs open that could interfere with the fluidity of the webcast. I will also try to restart my computer so it will have a better chance of not freezing. I may also get a drink and snack before so I am not tempted leave the computer as I do not have wireless internet where I live.
>
> starting off I would want to have eaten my dinner before we start the evening webcast. having thoughts of hunger or thirst often distracts my ability to retain everything I am Learning or Hearing.
>
> I may get something to drink as the professors had because as I watched the webcast, I became thirstier and thirstier.
>
> I think I will also try and work on splitting my attention between the webcast and the chat, because I found it very hard to concentrate on both at the same time. I would realize that I had only been reading the chat for a few minutes, and had no idea what was being said in the webcast. For the next webcast I will probably make sure I don't have any other tabs or applications open during the webcast, because I also got very distracted by those. I viewed the webcast from a study room, and I think that helped me focus and be more comfortable with the webcast experience. Overall I think I did an okay job with the webcast, and next time I will concentrate on giving the webcast my full attention.

Clearly, multiple distractions exist in students' physical environments and in the shared virtual environment of the webcast+chat. The following reflection depicts the distracting pace of the webcast+chat, for students and moderators alike:

> Before the next webcast, I would like to have written down some questions that I would like to ask before the start of the webcast. Last time I tried to think of things to ask in the middle of the webcast and it just got too confusing for me. It also looked like the instructors were just getting loads and loads of questions and it was difficult to keep up with all of them.

Students also mentioned strategies that they and the moderators could do to maintain the condition of attending:

> I might make sure to have some note taking paper by my side to ensure that I am listening, but I think that I did a pretty good job of staying engaged.

> I think the discussion would be more effective if the chat room had some guided questions or guided discussions. It was very easy for people to get off subject, or have a fast discussion about something unrelated.

While moderators employed strategies to keep students attending during the first webcast of the semester, like calling for questions from the students, addressing students by name in the chats to answer specific questions, and redirecting students generally when the chats drifted from the subject of the webcast, moderators were unable to sustain any but the briefest periods of attending. The instructors, while all logged into their respective chat rooms, were co-hosting the webcast, so their attention was split between speaking on camera and chatting on their laptops. Notice in the following exchange how UA Carson employed a bit of trickery to redirect students' attention to Amari, who was discussing class policy while students chatted about other, unrelated matters of interest to them.

AMARI: As we mentioned earlier, if you have a question about your grade, you need to contact your instructor. You may not IM the GA's and the UA's. You need to contact us directly because quite frankly, the buck stops here as far as your grade goes, so we're the people you need to talk to when you are concerned about a grade. I believe we've all sent out late work policies. So you need to read the late work policy that was sent out. I think that one of the late work policies is 10% per day up to four days, and then it's a 0. And furthermore it is not our responsibility to go back and look for your late work policy. Some point in the future it's your responsibility to say, "hey I've finished all the stuff and could you please go take a look at it."		
19:27:56	NC	Is the webcast going to cut off when the time bar at the bottom reaches the end
19:28:01	MT	i dont think so
19:28:04	FB	nope
So that we'll know. Because we don't spend our time going back through to see what's missing. You guys are old enough that you can let us know. Finally, we want you to succeed. That's our goal is for you to learn about information, how it's produced, developed, shared online, how to do those things yourself and how to view others as they distribute information. If you have any questions or concerns - any, even if you think they're dumb, even if you think everybody else in the class knows it, please contact us. Our class encompasses people who literally can check their email and search the net all the way to people who can build their own servers. We have an extreme variation in computer abilities. And all of you have your own goals and motivations, so please don't work up yourself trying to compare yourself to someone else in the class. That's not a productive way to look at this.		
19:28:15	C	I doubt it
19:28:16	FB	it will continue to run until they cut it
19:28:33	EE	Her Fruitista seems to never end...

19:29:00	EG	(is that guy wearing Oakley's?)
So if you have a question, please contact us. And remember you can contact us by email, IM, or come to our office hours here in the FAC. Anybody have anything to add? DREW: No, I think we're ready for questions. AMARI: Alright, you can ask questions now. Anything we haven't covered, ask us and we'll try to answer it. We'll do a lot of typing for the next few minutes, but if we get a question that we think would be helpful to everyone then we will talk about that question. And we're not going to answer anymore questions about the Fruitistas. I'm sure they're tasty. DREW: 27795 is talking about meeting at Taco Bell. … we have some Fruitista devotees in our class.		
19:29:35	BQ	Look like Oak's to me.
19:29:40	EG	minutes u think?
19:29:57	EG	or 20's
19:30:07	**Carson**	**Make sure you guys try and get Amari do something funny on camera.**
19:30:27	NC	should we record the webcasts?
19:30:28	EG	awesome
19:30:44	C	should have
19:30:47	FB	did not think of that
19:30:57	EE	Amari, please make this face >:o
[Amari does, indeed, make that face]		
19:31:12	EE	Hahahah
19:31:15	SC	HA
19:31:21	EE	anyone else it!? yes!!!
19:31:39	EG	close the other peoples' laptops
19:31:45	FB	carson you can make this one 8-)
19:31:52	EG	see if they get angry
19:31:56	**Amari**	**I don't think so EG.**
19:32:12	**Carson**	**FB, ha i do actually look like that right now.**

The moderators, again, sought an elusive balance between exercising some authority in their roles and doing whatever they could to keep students attending to the webcast. Just a few minutes prior the exchange above, the following three and a half minute exchange had ensued. Note that there was minimal attending to the webcast, and even those students attending to the webcast were not attending to what Amari was saying. Mostly, students engaged in a stream of conversational turns that started with talk about the modules but took students further from the webcast until GA Banji redirected them:

AMARI: Start early. OK. You need to get things started on time because we have a two-week turnaround for each and every module. Once you get behind it is so hard to catch up - it's just really overwhelming. Occasionally we'll get a student who will get so behind, and they'll come in mid-term and they have to put all their other stuff on hold to try and get caught up, and it's really difficult. We hate to see you in that position because it's not a fun position to be in. So more than being inconvenient for us, we really hate to see you go through that.

19:19:35	NT	yay amari's turn!!!
19:19:43	EG	all the instructors chat away when they arent talking
19:20:09	**Carson**	**Yeah, i will emphasize starting early. I don't think most you all realize that there is a lot of writing in this course. You are all graded your writing skills, so it is something to take seriously.**

So start the minute you can. I often give my own students the advice to go the assignments page first in each module and look at the assignments so that when they look at the assignments and the descriptions, if they read the description and the assignment and at sounds like Greek to them, then it's probably a good idea to budget some more time for that particular assignment because it means that you're learning a whole lot new for that assignment and it's going to take longer. The other advice we can give you is that you really need to read the modules carefully. Particularly when you're reading the how-to parts. Skipping this is not going to work for you. Skipping and scanning works for a lot of classes. I do it myself for a lot of classes. But part of coming to college is being able to figure when skipping and scanning will work and when it won't. And I'm here to tell you that for this class, skipping and scanning will not work. You really have to pay attention to the details. You will notice that if you read through all the directions

19:20:14	EE	Haha I was just noticing that.
19:20:19	SC	who hasn't started module 1?
19:20:23	EG	<- yo
19:20:32	FB	I started today
19:20:38	BQ	I finished it last week.
19:20:42	EG	it hard?
19:20:45	QU	I'm going to start after the webcast.
19:20:49	BQ	Not too bad
19:20:58	JW	i finished it 2 weeks ago
19:21:00	EE	The Revolution OS video was cool.
19:21:05	SC	oh you did did you?
19:21:08	BQ	A lot of reading and writing

and you watch the videos - pretty much everything we walk you step by step through. The videos in the modules - the ones that are embedded - will only play on Real Player. So you need to download Real Player to see those videos. My advice would be to watch those videos. You'll be amazed because the person on the video will do exactly what you're supposed to do and it will look the same as what is on your screen so you can compare them. So be sure and read and watch the videos - use the assignments summaries. And the other thing we expect you to do is to participate. So participation, Drew already mentioned, can be in a webcast, but it can also be IMing your instructors, or contacting them via email. As an online course, this course requires you to be proactive. It is not a course that you can go in and the teacher is just going to deliver the information to you and you can just sort of regurgitate it back.

19:21:15	JW	yahh a lot of reading and writing
19:21:15	FB	yah the Bill Gates part was great
19:21:22	JW	that was pretty gooood
19:21:28	EE	Haha yeah, what funny pictures of him.

19:21:31	TN	it wasnt up til last week there is no way finished it two weeks ago
19:21:37	SC	has anyone seen the new bill gates jerry seinfeld microsoft commercial?
19:21:45	FB	churro?
19:21:50	FB	haha it's great
19:21:54	EG	weird commercials
19:21:59	SC	i can never understand it
19:22:03	JW	haha i was kidding lol
19:22:09	NC	How come everyones name is a different color
This is going to require that you actually take a proactive stance in planning and asking questions and keeping on top of things. And the best way to do that is to stay in touch with your instructor and GA's and UA's and utilize all the tools we've given you. And the last thing about expectations is we need you to ask for help before you're overwhelmed. If you have been working on that web page for three hours and it's giving you the same error message and you can't figure out what to do, and you get to that panic point, then it's time to IM somebody. And, you know, sometimes we're afraid of asking dumb questions, and I won't lie to you, there are occasionally questions that sometimes, you know, everybody rolls their eyes at, I get that. But I also know that when you've reached a frustration point and things aren't getting into your head anymore, so if you can ask for help before you get there, you'll be much more likely to understand the help you're given and to be able to ask for it without that feeling of panic.		
19:22:11	TN	Gotcha
19:22:18	JW	that commercial is a knock off of the apple ones
19:22:26	C	I was just thinkin about that
19:22:27	SC	apple is number one =)
19:22:46	BQ	Ew, I hate apple, but to each his own I suppose.
19:22:55	MT	Lol
19:22:56	JW	SC has every apple product created in his possession
19:23:02	EG	new touches
19:23:03	EG	i want one
19:23:06	SC	yes i do... i was recognized by steve jobs
19:23:07	**Banji**	**Hey, let's listen to Amari. What she is talking about is very important!**

Masumi, who had been worried about sinking or swimming before the first webcast, related how the pre-webcast anxiety manifested itself during the webcast:

> I got to a different mode of existence, where, I, uh, you know, you could read a whole bunch of chat messages from 30 different students while being on camera trying to talk. Being on camera's big, knowing that you're on the spot, having two chat rooms open and knowing that other people in other chat rooms are seeing you on camera when you're trying to deal with the lag between asking students questions and waiting for enough of them to respond, and trying to make sure that the webcast is engaging enough for the students that they don't feel like things are starting to slip into boring territory.

Masumi felt like he had come to some facility in coordinating his webcast host-chat moderator roles, but one can see how elusive a moderator's hold is on students' attending in the following exchange. Masumi thought a question came up about grades, so he told students on camera that the instructors would provide a link when their first grades were ready for release. Then he provided the link in the chat (at 19:40:24). Then he qualified his having provided the link (at 19:42:32). The lone (as far as the transcript revealed) attending student asked a question about quiz grades a few seconds later (at 19:42:55), which Masumi answered (at 19:43:27). With the exception of TC, the lone attendee, Masumi's actions were disjoined from the students' chat conversations, which had diverged far from the webcast:

MASUMI: **Well, I think, did you get questions about grading?** We don't use Blackboard first, but we use something way better. We have our own little grade system. We talked about this, didn't we?
DREW: A little bit on how to check grades.
MASUMI: That'll come. **When your first grades are released we'll give you a link**, and you just click the link. If you're logged in to the homepage then it will allow you to see your grades through the class interface homepage – for the class. And it's all in there, including all the comments and your point totals and your letter grade, and all that stuff, so.

19:40:24	LX	did the webcast just stop for anyone else?
19:40:24	**Masumi**	**grades will be here: https:/.ischool.utexas.edu/grades**
19:40:33	FD	no it is still going
19:40:35	DQ	No
19:40:44	EQ	mine stopped
19:40:50	LX	its back now
19:40:50	FH	uhh I can't hear anything
19:40:50	DQ	its still going on
19:40:54	BI	mines goo
19:40:56	EQ	but i went to the homepage and opened it again
19:40:56	FH	oh ok
19:41:00	BI	Good
19:41:01	DQ	is it working?
19:41:05	EQ	just click on the link again
19:41:05	SN	its stil going, mine had a blip a few minutes ago
19:41:49	MQ	so
19:42:03	MQ	links from IM windows stopped working since i made Opera my default browser
19:42:09	MQ	fix?

19:42:16	KK	and mouse buttons also mess up stuff
19:42:24	TE	FH...
19:42:27	TE	where r u from
19:42:32	**Masumi**	**remember, you don't have any grades yet because orientation wasn't graded**
19:42:36	FH	Mexico?
19:42:38	NC	oh no what did she just say. real time just quit on me
19:42:41	TE	are you from mexico
19:42:46	MQ	well in general links dont work
19:42:47	KK	FH, do you have a fro?
19:42:51	FH	Yes
19:42:53	KK	and glasses?
19:42:54	TE	no...
19:42:55	**TC**	**is the quiz grade given to you immediately after the quiz?**
19:42:57	KK	you do play Smash?
19:42:58	FH	No
19:42:58	TE	he doesnt.
19:43:01	KK	awwwwwwwwww
19:43:04	FH	I wish
19:43:09	TE	FH has short black hair...

43:10▷this is something that I need to pay more attention to and need to make sure I synthesize really well. So…
AMARI: The quiz, on the other hand, is a one-shot deal. Once you open the quiz and start it, you have one opportunity to take it. If you quit in the middle, you'll have to start over, so you need to budget yourself time to sit and do it over time. But unlike the orientation quiz, you will not be able to re-take this quiz over and over until you get 100. But, on the other hand, I can't imagine anybody not getting 100 when they can open their module in one window, and open their quiz in the other window and find the answer. So it's a one-shot deal, but you really should just look back and find the answers. Now part of the reason for doing the quizzes. Some of you that have had friends in this course before know that we use to give day-long quizzes, twice we gave a mid-term and a final where you had to show up at a certain place, show your I.D. and take the quiz from memory. And what we found is that it really wasn't reinforcing the ideas we wanted to reinforce.

19:43:14	TE	and he spikes it sometimes.
19:43:20	TE	and he's not very tall.
19:43:27	**Masumi**	**yes, quiz grades are given immediately and you can see what you got wrong**
19:43:28	FH	I'm trying to grow a frohawk.
19:43:46	BI	i think there should be a margaritaville backdrop for the webcast... nice beach scene or somethin
19:43:54	FH	hmmm
19:43:57	HA	good idea
19:43:57	KK	paint that wall green
19:44:05	DI	u mean a fohawk
19:44:10	FH	Nooo

19:44:14	KK	Fauxhawk
19:44:14	FH	Fro-Hawk

Diverging

Attending may be the optimal condition moderators strove for in the webcast+chat, but diverging was the condition they most had to manage, and it was diverging that kept them *minding the verge*. Diverging simply indicates when someone has moved away from attending in the webcast+chat, thereby disconnecting for a time from the webcast+chat in order to attend to something else. Often diverging manifests as intolerable distraction, but just as often it manifests as knowledge seeking outside the webcast+chat, which presents moderators with one of the most difficult tasks they face, deciding if and how to manage diverging. UA Jing described the tension moderators faced when minding the verge:

> … it's kind of *a fine line* … it's great because the webcast provides students an opportunity to be in this virtual classroom, talk to each other, but we want primarily for them to get this learning information out of it, and most of that is being provided by the instructors or by the guest and not from the other students, so that's where *the fine line* is, how much can they respond to each other before it becomes off topic, how much as a UA, and that was my problem when I took this class as a student, is, well, what they said I can, someone says something, and I'm like, oh, me, too, and I want to talk about that, but am I gonna get in trouble for being off topic, and as a UA moderating them, it becomes how much of this should I allow? It's great that they're building off and going on these new ideas and sharing the experiences they have, but how far do you let that go before you say, ok, guys, let's focus. It's like we're asking something from them sometimes that, you know, *you can't really build a fence around it*.

Jing also depicted the ease with which students were drawn out of the webcast+chat and into the verge. Students may willfully have diverged and pulled others with them, but often diverging was not a conscious action, as BI noted in her sudden realization late in webcast 1:

19:53:12	BI	uh oh... what is the assignment for this webcast again? i zoned into the chatting again haha

So much about the verge is evident in BI's statement: The verge is a zone of detachment that moderators must mind else students slip into it unknowingly and miss potentially important information. In the chat, BI suddenly re-converged as if she had woken from a daydream, and she laughed at herself, having caught herself in this displaced state. In her reflection, BI expressed the need to hone her attending:

> The discussion was great. I just feel as if I need to work on my skills to chat and listen to the webcast simultaneously. Sometimes I feel as if we moved faster on some subjects and that I was a little lost but I believe its more of something I need to work on myself.

One student recognized the need to have multiple moderators working during the webcast+chat:

> The instructors can't always see everything in the chatroom while theyre speaking, but I assume that's why the GA's are also present.

Another student wanted moderators to be much stricter:

> I think that if we had stricter rules for the chat room discussion, it would be more effective. Several strings of discussion were about jaywalking, sales, and shopping.

But, as Jing pointed out, "strict" is a fine line. When I asked moderators about their seeming absence in the chats during long divergent threads and whether the absence was purposeful on their part, their responses indicated the balance they tried to achieve in minding the verge. The tension associated with moderating is evident in Heike's response to my question:

> I don't know, I mean, I feel, again, like it was kinda that balance of, you know, you don't want to shut it down so fast they feel like, well, I got no freedom at all here, but also, you know, and so, I mean, if it ran on kind of excessively long, you know, that was probably like, you know, and then it kinda gets to a point where if it has gone on, you know, past a certain point then it becomes kinda awkward to, you know, ok, now you've gone on five minutes with this and I haven't said anything, and so now it's going to be even worse to say something, you know, so…You want it to be a positive experience, so you don't want to be so hard on the rules that it just makes it miserable…

Masumi's response indicated the fragility he sensed in minding students diverging activities: "I don't want to say, hey, let's stop doing this, because then you're shutting down the sense of community." Masumi said the decision to jump in is mostly "a gut thing," based on whether or not "it's affecting other students."

Amari and Jing, too, said that knowing how to manage the fine line was a gut thing. "It tends to be so gut with me," Amari said. "It's like, if it's getting off track, it's just instinctive to get in there and try to pull it back in, and I almost have to control that sometimes." When I noted that "having to control that" indicated some conflict in the moderator role, Amari confirmed:

> Recently in a webcast I had students who began to go off on just really, they weren't even tangential things, they were going out to eat, or whatever, and uh, I had tried a couple of confirming things … like I said, oh, he's drinking this, because they got into a huge discussion about what Masumi was drinking, and I thought, I'm going cut this off by simply stating the fact. And so what may have seen a divergent thing to me was a facilitation control factor, because that chatter did lessen as soon as I confirmed, yes, he has a drink; no, it's not alcoholic, and let's move on, you know. But in a recent one, I actually had to write 'FOCUS,' and I did it in all caps, because we were all over the place. And I felt very conflicted about that.

Amari characterized the decision to remain absent during student diverging as a way to stay out of the students' way. Amari would try to "gauge" students' diverging, "as far as how much distraction is this providing at this point, based on student reactions."

Students had conflicted feelings about the extent to which moderators should mind the verge. CY offered the following reflection, including his take on differences in social etiquette between a "conventional" physical classroom and a virtual classroom:

> I believe the webcast would have been more meaningful if classmates had stayed on topic and not had outrageous IM conversations. I'm not calling for these students to be disciplined or anything like that (they are adults … and should know what is and is not appropriate for a lecture-based discussion), I just wish they had taken the lecture more seriously. Because they did not take the lecture seriously, it was sometimes hard for me to pay attention to what was being said. Part of the reason for this problem may have been a general misunderstanding

> regarding the etiquette associated with IM. Talking with IM during a lecture is only slightly different than talking with your voice during a lecture. The only differences are that, with IM, you are not making audible noise and (this is a very big "and") a conversation you intend to have with only one or two other students is visible to the entire class. Therefore, one or two students who feel like playing around don't have the option to hide in the back of the classroom and conduct their conversation in secret. With IM, their personal conversation is made public and readable to everyone in the class. Again, I'm not calling for these students to be punished. I fully believe that these students did not mean to disrespect the instructors or their fellow students, but, at the same time, my webcast experience would have been better if I didn't have to read about someone trying to grow a "frohawk" when Masumi or one of the other instructors was speaking about something very important.

CY recognized one of the challenges moderators faced in their use of chat in a virtual classroom. Heike noted the same challenge when I asked how the use of chat for the course differed from other, familiar uses: "IM is by nature informal, so it is hard for students to use it in an academic setting." Jing recognized the challenge, too, but also saw in it the opportunity for a meaningful shared experience that made the webcasts so exciting:

> Chats are more informal than one-to-one instant messages. There's more fluid thinking. You start at one point, through considering different angles & possibilities of the topic at hand … give and take, where you feel less like a pupil and an instructor and more just like two people talking about this higher-level thinking concept and asking questions more freely, coming up with , you know, oftentimes , more hypothetical or rhetorical questions, um, that change the way you think about the topic rather than searching for an answer, searching for more information, and specifically about the way other people think about it. Those are what make the webcast really great, that type of unexpected discussion that can sometimes come up.

Jing, who has been both a student and a moderator, said the webcast+chat breaks down barriers between students and instructors and enables "asking, provoking, pulling, drawing information and opinions and ideas out."

What does it mean to be a moderator in a webcast+chat? It means splitting one's attention among simultaneous, different media environments, breaking down barriers that

traditionally impede communication between students and instructors, knowing when to stay out of students' way when necessary but rein them in when necessary, being organized yet impromptu, structured but fluid, informal and informational. The subsequent webcasts presented opportunities for each instructor to take a turn at designing a webcast that would enhance and/or extend students' learning about a specific topical theme of the course.

Webcast 2: Networking socially can be dangerous

Webcast 2 was devoted to computer and Internet security, specifically to the advantages and disadvantages of sharing information through computer networks. Drew, who had graduated from being a GA for the course to being an instructor, designed the webcast as a panel discussion among security experts, including Jessie and Jac, both network systems administrators for the school, and Jing, who would serve as a "connection" between the experts and the students. This was the first (and still only) time that an instructor had asked a UA to be a guest on a webcast, and it reflected Drew's observation as a GA of weaknesses in past webcasts. Jing described her invitation to be a guest:

> Drew said I want someone who is more on their level. I don't want this to be in technical terms. There have been some webcasts that just, you know, it feels like a different language, and you can see it in the students, and you can see it in, you know, the questions that they're not asking, because you know they don't even understand enough to ask questions, so that was, the hour or two between when Drew asked me to be on the webcast and when it happened, that was what I just kept, you know, in the forefront of my mind, was, I really hoped that whatever we're talking about, I hope the students understand enough that they can keep asking questions and keep having insight, and not be, I don't want to be redundant.

As students trickled in to the pre-webcast chats, there were fewer requests for technical assistance compared to the first webcast, except for a few questions about how to change "handles" in the chat clients, so the conversations revolved, at first, around the pre-webcast assignment that Drew had posted. Students were to have listened to a podcast of an episode of *This American Life* (a weekly program on Chicago Public Radio featuring "true stories of everyday people") called "Enforcers," about three guys who, because they run elaborate cons on Internet scammers, consider themselves enforcers of justice (see footnote 11).

Once the webcast streams went live, students turned their attention to the video and reacted to the differences from the previous webcast. Both chat sections noticed, for example, that their instructors were not on camera as they had been in the first webcast. Drew had music playing on her laptop, which students also noticed:

18:56:14	MT	is someone playing music?
18:56:24	NC	hey how does it show what song Drew is listening to
18:56:27	BQ	yeah, one of them
18:56:30	NC	on that buddy list
18:56:33	Jing	Yeah - that's ""I Want You to Want Me""
18:56:37	Jing	Cheap Trick
18:56:40	BQ	probably some plugin
18:56:42	MT	ah ok
18:56:46	Amari	Yes, she is playing music and she has her computer set up to show what she is listening to.
18:57:51	Amari	I am not hiding. I am just monitoring two chat rooms so I run in and out.

Students also noticed the presence of strangers in the webcast. During the pre-webcast video stream, students tried to follow the chatter that Drew and the panelists engaged in before starting the webcast, and the students were confused as to whether the talk was part of the "official" webcast. Instructor Gezim, as chat moderator in her class section chat room, commented to the staff in an act of verge minding:

18:58:58	Gezim	Students are confused, maybe y'all could say ""Hey, here's the plan"" or something?

[Jessie echoes Gezim's statement on camera to host Drew, who says to the camera: We haven't started yet. We have about a minute, minute and a half. Hold tight.]

18:59:39	Gezim	Okay...
18:59:43	Gezim	that's good enough!
18:59:59	Gezim	They were just like... we're confused... what are they talking about!

For webcast 2, three of the four instructors were chat moderators in their section chats, which meant they could direct more energy to gauging how students were converging.

As Drew began the webcast, she suddenly realized the import of being the lone host moderator of a "topical" webcast as opposed to being one of four hosts for a "getting acquainted" webcast: "So welcome everybody to Webcast 2. I don't know how you guys do this and look at this at the same time. Welcome to Webcast 2." Jing remembered the experience that evening as a guest, facing the camera and trying to fulfill her role as chat moderator on her laptop at the same time: "I wasn't as aware of what was going on in the chat room as usual. It was so much harder to be thinking and talking and also reading and also chat stuff. I mean, talk about sensory overload!" Fortunately, Drew began the evening aware of the need to get students into and keep them in a condition of attending. First, Drew reminded them of the pre-webcast assignment:

> You should have all listened to it by now, but make sure that you have a tab in your browser open to the *This American Life* page, because there are links on there that we might want to visit later. So, if you don't have that, your instructors will be IMing that to you shortly.

Amari and Masumi responded by pasting the *This American Life* link into their respective chats. After briefly introducing the guests, Drew introduced a new strategy for guiding students into attending, "raising one's hand" to respond to a question, which helped students create a sense of physicality, of co-presence, in the chat. Drew also remarked about an awkward side effect of asking for a "show of hands," managing the lag:

DREW: What I would like to talk about, a few things. First of all, I don't think we did this last week, but there's a webcast protocol that we use which is the Shift button, the shift key and the "6", which is the little caret thing, and in the webcast that's how you raise your hand. So by show of hands, how many of you use social networking sites: Facebook, Friendster, if that's still around, MySpace, any of those. Who

does that? Any little carets? There's a lag. This is the smile and nod time.		
19:05:30	MT	^
19:05:33	UF	^
19:05:37	NC	^
19:05:37	LS	^
19:05:39	FB	^
19:05:39	KQ	^
19:05:41	BQ	^
19:05:41	LH	^
19:05:41	TM	^
There we go. Getting some carets. Fantastic. And did you guys, did you use those before college, or did you start using them once you got to college? [pause] And the people that you communicate with – these social networking sites, are they people that you know in real life, are they people you met in college – your family – who are you talking to? [pause]		
19:06:00	**Amari**	before or after starting college?
19:06:03	LH	Before
19:06:04	BQ	After
19:06:06	NC	After
19:06:07	LS	Before
19:06:07	TM	Before
19:06:08	FB	After
19:06:09	MT	before college, people that i know in real life/people i ve met online
19:06:09	UF	Before
19:06:11	EE	never...
19:06:12	NC	my friends
19:06:14	FB	Friends
19:06:15	**Amari**	Who do you talk to on your social websites
19:06:16	Amari	?
19:06:18	BQ	friends and family
19:06:21	LS	friends and family
19:06:22	TM	friends and family
19:06:28	MT	Both
19:06:29	TM	Both
19:06:32	UF	all of the above
19:06:34	FB	person ONLY
19:06:35	LH	mostly friends & family
19:06:36	SH	friends and family
19:06:41	EE	social networks are a waste of time?
19:06:43	NC	i try to only add people i know
19:06:43	KQ	friends of my grandparents
19:06:44	LS	people I know in person

19:06:47	BQ	99% in person
19:06:59	LH	only people I know
19:07:28	UF	have to have been sent a personal messege to accept.

Note in this litany of students' responses the points where Amari typed in the chat reminders of the questions Drew posed in the webcast. With three instructors, three GAs, and four UAs moderating the section chats and communicating in the staff chat, Drew – and Jing – could focus on moving the webcast along.

It takes a team to mind the verge

The longer periods of attending in webcast 2 that I charted were the result of coordinated communication among the chat moderators, who used the staff chat more effectively during webcast 2 than during webcast 1 to relay students' comments and questions to the host moderator and to each other, and to share with each other how students in the various chats were doing. GA Nala and Masumi relayed students' questions as quotations for Drew to pick up in the staff chat:

19:10:59	Nala	scary: ""somebody on myspace stole my picture and made a page""
19:14:56	Nala	""I'm in the rotc and the officers in charge of me use it to see if we're going to parties""
19:25:40	Masumi	(7:25:14 PM) DQ: i thought the story was quiet interesting and the nigerian guy got what he deserved
19:26:14	Masumi	LN: i thought it was crazy how funny they thought it was
19:26:47	Masumi	BK: -Are we suppose to make criminals suffer?

Other moderators summarized what students were sharing in the chats:

19:10:25	Amari	One of my students said the media checked her facebook page when she was in a car accident to get info.
19:25:35	Heike	someone thinks the nigerian guy got what he deseved.

Drew also used the staff chat to ask the moderators how students were reacting to the webcast and if she needed to adjust the pace or format of the webcast:

19:36:04	Drew	how's it going?
19:36:07	Drew	any suggestions?
19:36:22	Gezim	sorry...kind of overwhelmed
19:36:26	Drew	you are?
19:36:30	Drew	the group is?
19:36:36	Drew	our presentation is overwhelming?
19:36:47	Amari	It is looking pretty good in my room.
19:36:54	Gezim	We're talking about the laughter
19:36:54	Rae	our class is really good
19:37:05	Evelyn	yeah very on topic
19:37:17	Amari	They are discussing whether these scammers are born into poverty and need to do this, or if they are criminal.
19:37:28	Gezim	we're also on track.

During portions of webcast 2 the instructional team acted in concert to mind the verge, coordinating with each other via the staff chat to keep the webcast+chat fluid and flowing. During other portions, however, the webcast and chats diverged in a way that differed from the diverging conditions in webcast1. During webcast 1, as the instructors lectured about the specifics of the course, many students mentally disconnected from the webcast and engaged in what I earlier termed streams of conversational turns that took them further and further from the lecture. In webcast 2, however, in spite of Drew's initial attempts to pull students in to the webcast through questioning and the strategy of hand raising, the webcast conversation among Drew and her guests and the chat conversations among the students and the chat moderators occasionally took on separate and independent courses. Part of the challenge of minding the verge is maintaining connectivity, or a sense of co-presence, between the actors in the chats and the actors in the webcast.

The following long block of text represents a ten-minute portion of the conversation among the webcasters, who were discussing the *This American Life* story

about the scambaiters. Jac's comment, in bold below, illustrates a divergence between the webcast and chat. Jac noticed that "somebody" in a chat said something related to the conversation in the webcast, but Jac did not address that somebody directly or personally, That somebody was elsewhere, involved in conversation with others in a section chat room. Within the chats, students and chat moderators attended to the topic of the discussion, but the two chat conversations and the webcast conversation ran along three different courses, or in three different streams, until Drew pulled them back together with a question, also in bold below. Even then, though, the conversations in the chats were *about* the conversation in the webcast, not a part of it, as student LH's comment at the end indicates:

> JAC: I suspect the motivation on the part of the enforcers is mixed. I suspect there are some people who are really there … who are trying essentially … they're either trying to sort of waste the scammers' time as a way to sort of slow down the rate at which they can actually be scamming...
> DREW: I mean how much time does it take to send an email?
> JAC: Not a whole lot, but if you are sort of following up on those emails, that could take some time. **I notice somebody in your room who said "are they trying to sort of get them to see sort of see what it's like to feel victimized?"** I think there's probably some of that. Um, but the fact of the matter is that it seems like these guys in particular – it's like a game – they're like cats playing with a mouse to some extent. They enjoy sort of the game of it, which is why I think it was easy for them to sort of go too far. Because they didn't – they hadn't sat down and said "why are we doing this, what's our goal in doing this, what are we hoping this guy will learn from it?" It was "hey, let's see if we can out-scam the scammer."
> JESSIE: Yeah, I mean they found it thrilling. You can tell they were getting excited by the idea that ... and the disconnect of … they know that the Darfur region might be dangerous, but they're not there, they can't see it. I think there's a lot … you know they just allow themselves to believe "well, he might suffer a little bit … and if he gets killed we won't really know about it." And I think that … I mean you have to look at the choice they're making. If they really want to stop this scam, and they know that there are no like international agreements to do that, they're not making a dent in the crime by making this one person suffer. I mean, their time would be better spent educating people who might still not get the word that these Nigerian 409 scams are out there, and they're not credible and maybe even making your resources to forward those kind of mails to educate, you know, people that would otherwise be susceptible to getting them. To me that's a much more productive way of handling that if you're really outraged. These guys seem to get a little too much joy in exactly the kind of thing they think this person … I mean if you listen to their story, they're almost enjoying this, the suffering that they feel they're putting this guy through in the same way that, you know, a scammer would be maybe enjoy the money that he or she is getting from someone that they happen to be scamming.
> JING: I think the breaking point is, you know, at the beginning they say "well, we're doing it to waste his time, we're doing it because, you know, we'll try and stop him, and then that one point when, you know, the guy's on the street with the signs, and all that, they start saying, "well, we wanted to make him feel isolated – it's about isolation." And then it's clear, you know, what

really is their motive, what are they getting at, what's their objective, and are they just trying to justify, you know, getting their kicks from getting back at someone.
DREW: Well, did it work?
JAC: Did what work?
DREW**:** Did it work? Did their baiting, their anti-scammers scamming – did it work? **What do you think? What did Ira Glass think? [long pause] Yeah, nobody seems to think that it worked. Nobody seems to think that it was successful. They don't think that it prevented him from doing it again.** And that's part of what Jing was saying, what are they trying to get out of it? Because it's only successful if their goal was reached, so if the scammer's goal was to waste this guy's time, then maybe it was successful. If the scammers – the anti-scammer scammers, the baiters – if their goal was to prevent him from doing it again, then, no, it wasn't successful. So I think the only way to really judge whether it was successful is figure out what their motive was, but they mentioned like two, three different motives in the 29 minute cut that we heard, so it's hard to know, really, what the point was. I've talked to some people that are baiters, that do this kind of work, and I tend to get a sort of "well, it's wrong, it's a bad thing to do," so we're teaching them a lesson and we're just kind of screwing with them because we can. Because they're jerks, they're saying, these people are doing bad things so what does it matter that we're kind of screwing with them. Like, maybe it's not getting anywhere, but…
JESSIE: Well, it satisfies a very visceral, you know, need which is to exact revenge. It's totally understandable that somebody would want ... you know someone who feels strongly that these people are causing others to suffer. And I have no doubt that some of these scams have, you know, drained, you know, people who didn't realize they were scams of significant amounts of money. I don't think people would continue to do them, unless they worked. I think that's an outrage. And I think it's totally understandable that someone would want people who are perpetrating that to suffer. The thing that I would find difficult is … we have such a hard time again knowing about the authenticity … how do we know you're really scamming the scammer who's sending these emails? I mean all you really have is an email address. And basically all they knew about the fate of this guy was whether or not he was responding to whoever … that someone was responding to the emails. And that's a huge stretch to make someone … some anonymous person who may or may not be the person you're going after, go through those things.
DREW: And they really don't even know that he went through with any of those things in this case. In other cases, they have tangible video, you know photo evidence, including the Monty Python Nigerian Scammer video that we watched. But it seems like in the ones where there are, there's visual, tangible evidence, they're not as extreme. So somebody getting a tattoo of something, somebody, you know, wearing something. Was somebody saying someone wore a fish on their head? Was somebody saying that earlier? I mean those things that you can prove, but are those really … bad? [pause] Is there any way … because people are saying that they could have been doing this whole thing from home. I mean, Adamu, on his side. I mean, you know, people are saying they could have changed the ip addresses. I mean, how much work do they put into this?
JAC: Well, and another thing you have to think about, how do we know there is a guy on the other end? How do we know that … I mean there's obviously money to be made here. Anywhere there's money to be made there are businesses to be set up. So who's to say that there isn't, you know, a structure in which there's basically a business? People are just … there's an office full of twelve people who sit there and pretend to be various names and they sort of follow each lead as it comes in, but really they're ... I mean I don't know, I think that … I think there's really something … you really have to ask about the legitimacy of what the enforcers think they're accomplishing. What I think is sort of interesting is that … I think one of the reasons that people started doing this sort of scam baiting early on was in some ways to see, you know, the scammers rely on, you know, the gullibility of the people they scam. And so people just want to go, "well how gullible are the scammers?" But then you sort of have to reverse that and go "well how gullible are the scam baiters in believing that the scammers are doing the things, or even the people that they claim they are? At some point you really don't know who's scamming who through this sort of infant regress of scamming and the anti-scamming.

DREW: So then what happens? Is it just a game? Is it a good story?
JAC: It's certainly an interesting story.
DREW: Yeah, I think it's a good story, but I mean is everyone, is it just like some giant multi-player game?
JAC: Yeah, it's a world of warcraft for people who've gotten kicked out of World of Warcraft.
JESSIE: The sad part to me is that on both sides that the original scams and the counter scams are really sad and kind of basic scam attempts. I mean it's really two operatives doing these really rather pathetic, you know, methods of convincing, you know, or gaining someone's trust and convincing them to do things. It is kind of interesting that the scammers, the purported scammers, don't really recognize their own methods being used back on them. And again their methods are really crude. I tend to think … you know these emails come in broken English. I think people are kind of outraged at the idea that scams this weak actually work, and that actually makes them more motivated to go after these guys.

19:42:22	LH	i guess i never really thought about his point! i usually just think of a person scamming you.. but a ""business"" doing it.. that;s scary.

LH and her chatmates may just as well have been watching a pre-recorded conversation for all the interactivity that happened between the webcast and chats. In webcast 2, moderators, while tending with students to the topic of the webcast, allowed the entire chat to slip away from the webcast+chat into the verge.

When Drew led the webcast discussion to the subject of the scambaiters, Masumi, in an effort to guide his students into a condition of attending to the webcast, announced to his chat room that the topic of the webcast was shifting, but his choice of words led them – and him – away from attending into diverging. The following conversation could have taken place in a chat room among people who had listened to the podcast, without an accompanying webcast. In fact, note FH's reference to the webcast at the end of this exchange. It is as if for FH and at least one of his chatmates that the webcast is purely a distraction, unrelated to the matter at hand:

19:18:33	Masumi	ok, talking about the podcast now

[after students raise their hands ("^") or reply "yes" or "no" to Drew's question, had they ever gotten a "Nigerian scam letter," Masumi, his students, and his GA talk about the podcast]

19:29:26	Masumi	the part that scared me was the nationalistic ""us vs. them"" mentality of the baiters (kind of xenophobic, or even racist?)
19:29:54	BI	yeah
19:30:01	MW	i don't see how anybody could find it funny o_O
19:30:03	MQ	yeah they sounded very cult-like
19:30:15	UF	Dido

19:30:17	FH	Alot of people are xenophobic.
19:30:25	MQ	well its pretty funny, but you shouldnt be dishing out justice because it amuses you
19:30:27	SN	it was rather racisit, what bothered me was that they sent them not to some place where they would be waiting their time but to places where they could be killed
19:30:36	LY	Why is it mostly nigerians who try these scams?
19:30:44	CY	They are not dishing out justice, they are dishing out revenge
19:30:48	DQ	because they have nothing better to do
19:30:48	DQ	??
19:30:56	Heike	and obviously there is a difference between taking someone's money and taking someone's life
19:31:03	MQ	they feel like they are policing instead of the government
19:31:07	**FH**	**the webcast is throwing me off haha**
19:31:08	**UF**	**yea thatz true**
19:31:13	**FH**	**we should have a seperate webcast**
19:31:18	**UF**	**yea.**

Other instances of this sort of mass diverging involving the moderator occurred during webcast 2, including Amari's initiation of divergence with her question, "Are you secure?" Such divergences may have led to interesting and provocative conversations among the participants in a chat, and they may have resulted in Jing's wish that students "keep asking questions and keep having insight," but the divergences isolated groups from one another – chat from chat, and chats from webcast – potentially limiting the level of insight that participants might have gained from participation in the larger group of the webcast+chats.

What does it mean to be a moderator? It means coordinating connectivity and interactivity among the course section chats and webcast, and minding one's own condition of interaction.

Webcast 3: Networking socially raises a lot of questions

The theme for webcast 3 is always Internet history, but for the past three years the conveners of the semester's third webcast have designed it as an exploration of current

trends related to the Internet, a sort of Internet history in the making. For the fall 2008 semester's look at current trends, Masumi adopted the format of webcast 2 by inviting two experts on virtual worlds, Noor and Boma, to sit for a panel discussion about online communities as they related to social networking. Some pre-webcast chatter lauded the new décor of the studio, where Gezim had put up a beach backdrop on the previously-plain wall and added tropical flowers and grass skirting to the table. Heike and Gamal were chat moderators in Masumi's section, but neither contributed to the pre-webcast chat, perhaps because by this third webcast, students needed little orientating and could converge easily into the webcast. Amari was moderating from out of state, which prompted some chatter. From the very beginning, the two chat sections paralleled each other closely in webcast 3. In each section, a student tried desperately to engage other students in some non-webcast conversation about the big football game with the university's rival that was coming up the weekend after the webcast, but neither drew a response. In Amari's section, it was EG:

18:54:40	EG	so whats the highest anyone has gotten for their [game] tickets?

In Masumi's section, it was TE:

18:54:12	TE	whos going … this weekend to see the game?
18:54:45	TE	ooohhhkkkay.. nvm.
18:54:46	TE	lol.

Masumi began the webcast by briefly introducing the guests and asking them to talk a little bit about themselves. After a couple of quick "house-keeping" comments, one about grades from the previous module and one about keeping the webcast short so everyone could watch the presidential debate scheduled for later in the evening, Masumi started what would become another protracted webcast discussion among the host and guests, with little interaction between the webcast speakers and the chatters in the course sections, by asking Boma to define a virtual world. Boma named several specific

"worlds," including Second Life, in response. At four minutes into the webcast, Masumi called for a show of hands, just as Drew had in webcast 2. Doing so prompted an understandably incredulous response from Noor:

BOMA: Um, well, o.k., virtual world - I would say, we're looking at this point at 3-D graphical and 2-D graphical worlds are what we're looking at. We're looking at worlds that are persistent, meaning that when you log in the world's happening, the world's occurring. When you log out the world continues to go and people can kind of keep moving around – can keep going. Uh, there's – in most of them now there's user-generated content, so when you look at things like, uh, you know, World of Warcraft, a little bit when you have HUDs, Second Life for sure – There.com has some, Kaneva has some. Um, as far as definitions, though, I think you're looking at community, you're looking at persistence, you're looking at kind of a graphical interface, this is how you're using most of those now. Um, I'll kind of start off from there, really.
MASUMI: O.k., yeah, that makes sense. Um, quick, in your chat rooms do a show of hands of how many of you know about Second Life.
NOOR: How do they do that?
MASUMI: The little caret key. A little hand raise. [pause] O.k., I'm getting some responses that some people aren't familiar with Second Life, so you want to talk a little bit specifically about what Second Life is.
BOMA: So Second Life is …

Masumi's question leads to responses in the chats, but just as in webcast 2, the students began alternating in their conversations between attending and diverging, and Masumi did not address the students again until nine minutes had passed:

> Let's pause for questions for a little while. If you guys have questions, send them to your instructors, or, if you're one of my students, send them straight to me in my chat room. Um, and then we'll try to get some of those answered. [pause] So…MMORPG, is that still the defining term? It's kind of unwieldy.

Notice that after posing the question, Masumi paused (briefly) then carried on. During the intervening minutes between Masumi's call for a show of hands and his calling for questions, moderators in the staff chat were doing the same kinds of coordinating that they had done in webcast 2, discussing the reactions they were getting from students in their chat sections and relaying questions to Masumi. However, some of the moderators began using the staff chat to answer each others' questions about the webcast discussion:

19:17:47	Nala	can you buy real life items on there? or all virtual?
19:18:18	Nala	Jay Willingham is answering lots of questions in our chatroom-- well trained by Boma!
19:18:43	Nala	Do you spend real money in 2nd life?

19:19:49	Gamal	ya i think it costs money to buy credits or something
19:20:04	Gamal	which is kinda ridiculous
19:20:16	Amari	You can join second life for nothing and do lots of stuff for free.
19:20:31	Gamal	well there you go..im wrong
19:20:36	Amari	You can also participate in the economy by purchasing Linden dollars which can be used online in the second life community.
19:20:49	Amari	So, most people usually end up spending some bucks.
19:20:58	Nala	who gets the money?
19:21:06	Nala	is it all exchanged, or does Second Life make a profit?
19:21:23	Amari	Linden Labs does the exchange, so I guess they get the money.
19:21:49	Amari	However, you buy virtual things and services from others who get paid for that in Linden dollars which they can cash in.
19:21:59	Amari	So, I don't really know what Linden's cut is.

While Amari was engaged with the discussion of Second Life in the staff chat, students in Amari's chat section slip back and forth from attending to diverging, wandering into and back out of the verge, which no one was left minding. Amari's GA Banji was present in the chat but did not contribute anything to it until the very end, with a simple "bye!" In the following exchange, the webcast and chat conversations followed the same parallel but disconnected courses that those in webcast 2 did. The notes in the right column are my interpretation of the actions in this exchange:

NOOR: Well, we probably don't remember a day when everything you did with a computer was through the keyboard. There was no mouse, so to check your email you typed mail on a fax machine, and then you had to type all of the commands. And in LambdaMOO and the earlier MUDs, everything was text-based. So if you wanted to describe yourself, you did it like a novelist. You wrote out some interesting description, and you were not stuck with whatever possible avatars there were. You know, you could be whatever you wanted to be. And it was really a fun place to be. You could do a lot of description, and a lot of interaction would start with somebody typing "look" and then the name that they saw – a person in a so-called room, you might call it a chat room, but they didn't call it that in LambdaMOO because that would have been uncool.			lecturing
19:18:22	BQ	this sounds fascinating O_O	attending
19:18:34	WN	yeezziirr	attending
19:18:37	EG	ZORK!	attending
19:18:43	EG	who ever played that?	diverging
19:18:44	CG	I agree	attending
19:18:49	EG	text based game...	diverging
19:18:52	EP	2K9 is out	diverging
You would type "look" and then the name of the character and you would see what they described about themselves and you might decide you wanted to talk to that person or			

not. Um, in Second Life I think you choose little avatars that march around and act on your behalf. But I would like to expand your question about 3-D. Because it's not really 3-D. BOMA: No, it's not. NOOR: It looks 3-D, but it's really 2-D. MASUMI: Right. BOMA: Right, it's absolutely 2-D. MASUMI: So you *[speaking to the students]* interact with our server in the text-based environment when you log on via a Secure Shell. Um, so imagine that a little text window on your computer, except instead of going straight to a command line where you interact with a system, everyone else who is also logged on at the same time, can see the things that you type, so it's like a virtual chat room. And as Noor said, you can also see descriptions of other people. The virtual locations that you're in in this text-based environment, you can read descriptions of those. You can move around in these environments by typing,			lecturing discussing lecturing
19:19:04	JW	im gonna play that fo shoooo	diverging
19:19:19	EE	anyone else have skype going?	diverging
19:19:28	BQ	ventrilo ?	diverging
19:19:30	BQ	lol	diverging
19:19:31	EE	same thing	diverging
19:19:38	EE	haha i use vent as well	diverging
19:19:51	EE	but skype is tight cause it makes the ringing simulation...fun...	diverging
19:19:59	QU	Y'all must be CS players if you use vent	diverging
so it's a really interesting place, but the visualization is all in your head. So let me move on to Boma now. Talk a little bit about how Second Life is a place that's different from the World Wide Web as a place. I think some students are kind of confused. Is it a website on the Internet? Is it its own thing? BOMA: So, okay Second Life is a client. It's basically, you download a client and run it on your computer. Uh, are you familiar with clients? NOOR: Client being a software package. BOMA: A software package, right. So you download it and turn it on basically. And you're running it kind of similar to any other program. And when you run it, you're connecting to other people and basically, that are running the client as well. So it's not necessarily interconnected. There isn't interoperability between different worlds right now. So when you run World of Warcraft, I think you download, or actually, you have this CD you put into your computer and then you log in with the Internet and you're getting all of your graphics, basically all of your images off this CD or DVD. And then you're playing with all these other people. Well, Second Life is different because you've got your client that you're running,			discussing
19:20:09	EE	CS as in?	diverging
19:20:19	EE	vent was for WoW	diverging
19:20:22	QU	Counter-Strike	diverging
19:20:30	BQ	i used vent for Dota	diverging
19:20:32	QU	or WoW I guess	diverging
but then all of the media is being streamed to you basically, so you're kind of walking around and things rez, or appear to you as you walk further into the world. So that's kind of one of the differences. Then another big distinction between it and maybe the World Wide Web is that you're stuck in Second Life. If you're in Second Life, you can't necessarily interact with people in a different world, or interact with somebody in			discussing

Facebook, although there are links and you could run a webpage inside Second Life. And you can bring in streaming videos from YouTube, but you're not really interacting, you're just kind of looking at media based in a media clearance out of Second Life. So I think those are kind of the big differences. You're not receiving email inside of Second Life or anything like that. MASUMI: And this is international….the user base? BOMA: Absolutely. MASUMI: Okay. BOMA: Yeah, right; now Americans are kind of at the top are slowly losing the ground to Brazil, and then Germany…Germany and Portugal are the next biggest users, so as that increases I think the Americans are going to start losing more and more ground. MASUMI: Here's an interesting question.			
19:21:25	EE	Who is the guy talking right now	attending
19:21:32	BQ	Guest speaker	attending
19:21:34	EE	name?	attending
19:21:39	BQ	Not sure	attending
19:21:39	QU	Teacher of the Second Life class	diverging
19:21:51	LS	Bowma Egdo	diverging
19:21:55	LS	Boma	diverging
19:21:56	NT	what do they learn in the Second Life class?	diverging
19:21:58	EE	haha bowma	diverging
"Do people just join a virtual world to act like they're someone else?" BOMA: Absolutely. Sure. I mean, yeah, I would imagine that there's, uh, there are so many levels of that question to address. MASUMI: Right. That's a pretty big one. BOMA: But I think, from my experience, there's people, and when I say, let's start off with educators and librarians, which are a big group that I study. Most of the time when they log into Second Life, they're representing their real selves. So they'll usually use their first name, um, and then they have a last name that is kind of generated for them by Second Life. And everybody has a profile somewhere to MySpace or Facebook, where you can right click their avatar and basically get their profile. And in the profile…people that represent themselves, that aren't really role-playing will actually say in their profile "I am an instructor at the university…" or "I've been a librarian for 25 years, I'm looking for other librarians." And then you can also see the types of groups that they join. So usually librarians join groups that have a library in it, so the American Library Association or Reference Desk 2.0.			discussing
19:22:01	EE	thanks LS	diverging
19:22:09	Amari	It's a really cool class.	diverging
19:22:11	EG	homework tonight, buy a house- awesome	diverging
19:22:14	CG	is it History of Second Life	diverging
19:22:38	NT	ohh I bet that's really interesting	diverging
19:22:40	Amari	No, they learn the basis of it, then they go into it, and then they build their own community.	diverging
19:22:48	JW	goood joke	diverging
19:22:48	CG	is it a real class or virtual	diverging
19:22:52	Amari	They even meet for class there later on in the semester.	diverging
And instructors are usually members of groups that belong to their universities. So you'll see University of [whatever] Group, or [some] Student Group. Now there's other			discussing

people that log in just to play. Now, you know, maybe they're representing themselves, maybe they're not. So, these might be some of the club owners or some of the people that are dancing, or people that are kind of selling clothes, there's lots of fashionistas in there. Now when we talk about "self," maybe you have a man who's representing himself as a woman inside of Second Life. Is that not himself? Well, who knows, unless you actually start talking with the person, that's just another side of themselves that they want to represent. If someone is representing themselves as maybe an elf or a dwarf in Second Life, well then they're probably not really a dwarf or elf in real life, but ... MASUMI: Probably? BOMA: Yeah, probably. Well, who knows. We haven't been everywhere, right? NOOR: So I would argue that it's one thing to present yourself as an elf or a dwarf. It's another thing to interact as a completely different person.			
19:23:07	Amari	They start out meeting face to face, and then move to mostly online meetings.	diverging
19:23:08	BQ	lol thats tight	diverging
19:23:21	NT	sounds complicated! haha	diverging
19:23:26	CG	WOW that sounds interesting	diverging
19:23:32	LH	I agree	diverging
19:23:34	Amari	First 2nd Life millionaire. http://www.businessweek.com/the_thread/techbeat/archives/2006/11/second_lifes_fi.html	diverging

Amari returned from the staff chat discussion and re-entered the section chat at the point that students were diverging. Rather than redirect the students, Amari branched, taking up the discussion of Boma's Second Life class. In the interview, Amari and I talked about the relative control a moderator has over being drawn into students' diverging actions. Amari spoke about coming to "figure out non-punitive, more facilitative ways to pull their attention back, [like] providing a piece of related information [or] giving them a piece of trivia about that information that's being presented." Notice the piece of Second Life trivia Amari offered the students at the end of the last exchange, above. It sparked an engaging conversation about Second Life. The webcast, however, had continued with a further discussion of LamdaMOO. Amari returned to minding the verge with a strategy, providing the diverging students with "distractions" that were closer to the topic of the webcast than the students' own distractions. Amari admitted it felt like a manipulative role, but it worked and helped keep students engaging with a topic.

Part of being a moderator means finding strategies that work for you in the moment, like branching in order to control the flow of diverging.

Webcast 4: Reaching you where you are

Information searching and evaluation was the topic of webcast 4, for which Amari oversaw two major changes to the webcast format. The first major change was that the guest for webcast 4, Millie, Instruction and Outreach Librarian for the university's main library, would serve as the host and moderator for the webcast. The second major change was the addition of a large flat-screen monitor to the studio, on which Millie could see all the course section chats simultaneously (see Illustrations 4.1 and 4.2).

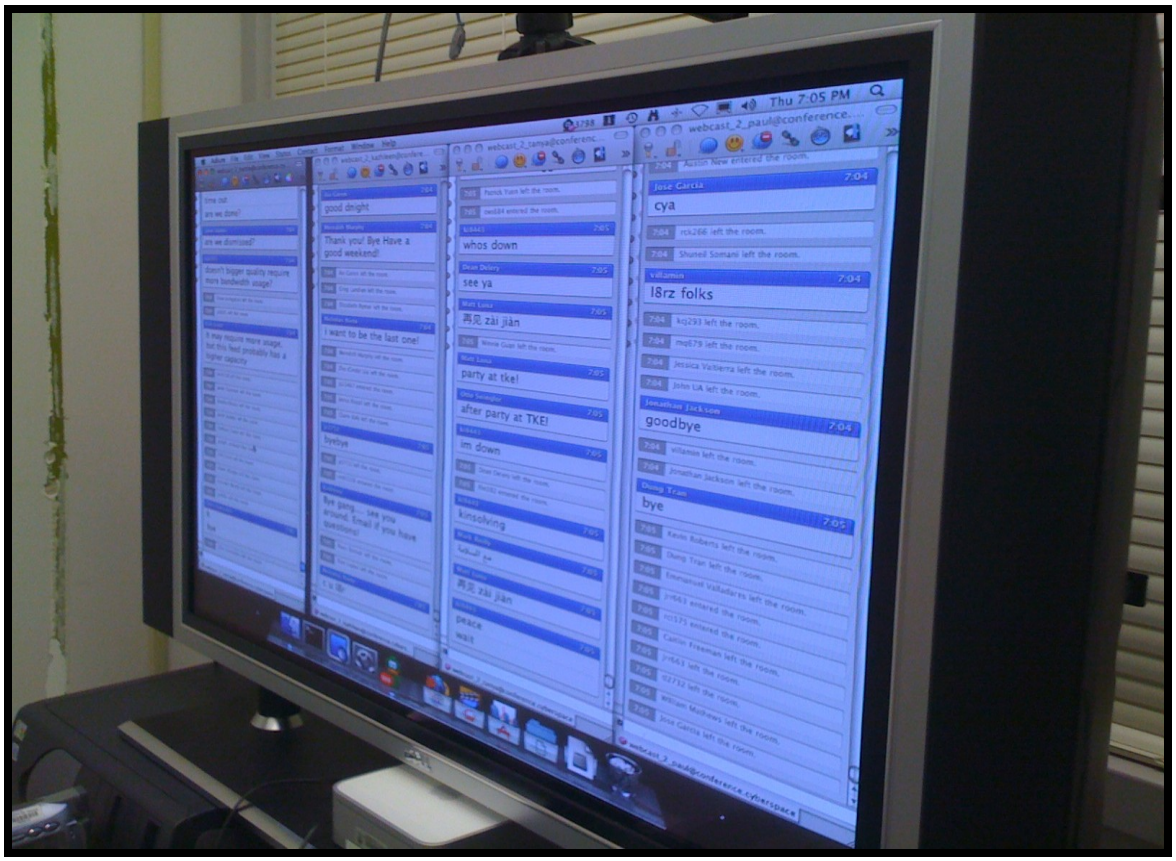

Illustration 4.1: Flat-screen monitor for viewing multiple chat rooms simultaneously in the course webcast studio.

Illustration 4.2: Moderator viewing a flat-screen monitor for viewing multiple chat rooms simultaneously in the course webcast studio.

Because of the changes to the format of webcast 4, including the new equipment, the pre-webcast chatter included considerable orienting between the instructors in the chats, Amari and Masumi, and the students, as the video streams started and stopped and restarted a couple of times. The conversations were reminiscent of the first webcast:

18:52:38	TC	how do we join the webcast again? i havent been to the last couple webcasts...
18:54:08	Gamal	webcast_#_instructor
18:55:32	FH	Are we supposed to hear audio yet?
18:55:35	SN	anyone else having problems with the realplayer feed?
18:55:48	UF	ok im on
18:56:02	FH	nevermind, yes we are

18:56:03	Masumi	realplayer feed not up yet; the quicktime feed is currently us demoing new software
18:56:16	SN	oh
18:56:32	SN	ok, thanks. Good to know
18:57:09	UF	ok i was tryin to get it to work
18:57:15	UF	when is it gonna b up
18:57:50	BI	yayyy its the beach paradise scene! it does look like margaritavilee
18:57:54	FH	timed out
18:59:20	Masumi	quicktime feed just switched back, so you'll have to reconnect
18:59:26	CY	Cheeseburger in Paradise!
18:59:29	UF	ugh
18:59:30	FH	how come i don't hear anything
18:59:31	Masumi	and realplayer is up
18:59:36	UF	good
19:00:30	DQ	nice
19:00:37	DI	okay.

Once the streams were working and Amari started the webcast, the nature of the chats changed dramatically from the previous webcasts. From the very first remarks, below, Amari and Millie engaged students' attention and maintained the condition of attending to the webcast+chat for the duration of the webcast, with just a few exceptions. In their opening remarks, Amari, then Millie, explained the format of the webcast and anticipated what students might interpret as their being distracted on camera. Millie, then, called for immediate interaction by asking an open-ended question, which required more intellectual engagement from the students than the requests for a show of hands or simple-response questions that initiated the previous two webcasts. Once students began responding, both Millie, on screen, and Amari, in the chat, repeated students responses, sometimes thanking individual students by name, thereby creating an intimate sense of co-presence and connectivity:

AMARI: Alright, good evening, welcome to webcast number 4. Tonight I'm very excited to share with you one of our librarians from [the main library]. Her official title is Instruction and Outreach Librarian. And her name is Millie Reed. And tonight she's going to talk with you about all the ways that the library is evolving and beginning to reach out, particularly in all the different ways that they do that through the computer, and so it will dovetail nicely with what we are doing in class and what you have learned in this module. Uh, this webcast will be slightly different in the fact that Millie is going to talk directly to you. I will be relatively minor league involved. I will interrupt her if I have a question that I see is not getting answered. It will not be a technical interview, so she's going to be asking you questions, she's going to be giving you some information. If you don't already have it up on your screen, I'd like you to open up the library, the UT Library website, because as she talks to you, that way you can go along and look at some of the things that's she's telling you about. During the webcast tonight you'll find that I am talking, uh, chatting with my students online, and monitoring our staff site where people will feed me questions that maybe you could ask that maybe haven't gotten answered. So please don't be offended if you see me mostly looking down at the computer. Um, and I hope you enjoy it and at the end we'll talk a little bit about our next webcast, because there's going to be just a slight change. And I'm excited to welcome Millie.
MILLIE: Hey, everybody. I can actually see all four chat rooms, so if my eyes look like they're scanning back and forth, it's not a problem I have with actually trying to read and keep up with what you guys are saying. Um, so I have a couple of questions for you, just to kind of gauge, like, what you think about libraries and librarians. Um, what do you think librarians do all day, like, what do you think a librarian's job is these days?

19:08:05	Amari	What do you think librarians do all day?
19:08:12	SS	read books
19:08:13	MT	organize files?
19:08:21	QU	Help people find books
19:08:21	LH	to help find books and research materials
19:08:34	LS	Keep track of books
19:08:43	KQ	hang out with books
19:08:46	EP	go on facebook
19:08:50	NT	organize books, help people research...
19:08:55	SH	To assure that all book are organized and for any new books coming in and help students with any resources they need help with in the library

I'm just going to try and, um, see what you're saying. Any thoughts? Help students. Re-shelve books. Thanks, L. Read and/or analyze books. I wish that was the extent of my job. A lot of people think I shelve books all day. Wow! Tell people how to find stuff in the library – get books. Yes, this is right. Absolutely, I agree with that. So, a lot of you are saying "help people" which is good to see. A lot of you think we spend a lot of time with books, that we spend all day lovingly holding them and putting them back on the shelves, as well. I can tell you I've been a librarian now for three years – I've worked in libraries almost ten years,

19:09:38	KQ	Wikipedia - A librarian is an information professional <http://en.wikipedia.org/wiki/Professional> trained in library and information science <http://en.wikipedia.org/wiki/Library_and_information_science> :D
19:09:55	Amari	Nice, Jason.

and I've never checked a book out to anybody. I've re-shelved some books in my lifetime, but let me tell you something, most of my job involves, whoops, helping people … just lost … ok, great … it's good to know … um, involves helping people find the information they need. Actually trying to understand what they need to begin with, and help them access it and evaluate it … So, that's what a lot of my job is. Um, I saw L in one of the groups had mentioned that she's actually had me in her class before, which I assure you we're not talking about what we talked about that day, so this won't be a repeat for you.

Millie, who was a webcast guest for the first time with me in the summer of 2008, admitted in our interview that she did not know what to expect during that first appearance, with computers and cameras mediating our interactions with the students, or whether students would be responsive or engaged when they were in "their personal space" somewhere, joining the webcast from some remote location. It was more interactive than she had expected. Millie was used to going into classrooms and talking with students there, and her own personal experience with professional "webinars," or online seminars, inspired her approach to the webcast:

> When I attend a webinar online, I'm in and out, multitasking the whole time, so I wondered if in their space on their own I'd get enough responses to build off of it so that it would seem more driven by them, which is how I prefer to teach, is have their questions and have their points of inquiry driving instruction sessions, and often, you know, I'm leading them to particular points of discussion, but I really prefer a classroom where that's happening, so I was kind of wondering if there would be room for that, and I think at the end of it I felt like it had gone that way and that they had responded to a lot of questions in interesting ways.

When we explored her personal experience with webinars more, she professed that the more theoretical ones lose her quickly, that the presenter must offer "practical information" in an engaging way. When I asked her how, as a presenter, she kept her presentation engaging, she said she finds the point at which students are already familiar with whatever information literacy learning outcome (her primary goal) she's focusing on, so she talks about finding background information in Wikipedia for starting research, because she knows that Wikipedia is a common starting place for students tasked with research, or she introduces advanced Web searching and evaluating information with a Web searching scenario they have encountered.

Millie discussed in the interview the progression of her webcast experience from her first experience with me, which, she said, was more a conversation between the two of us with our bringing the students from my chat section into the conversation

sometimes, to her fall experience, when she could see all four chat screens, which she said felt more like a broader conversation, more inclusive. Millie also discussed her strategy, which is driven by pre-determined points of discussion but is responsive to the direction students take the conversation:

> I usually start talking, and what I try to do is start with questions so that students are actually answering them and we're able to take those answers to kind of drive the rest of the questions. So it's a matter of me talking and watching the students respond, um, and then me continuing with kind of these pre-planned discussion points but adjusting based on what students choose to discuss amongst themselves in the chat rooms and what they address as questions to either me or the other staff member … so it's a delivery of information to them, in kind of, again, that performance mode, um, but the webcast, the technology that's been incorporated into it, again, has been evolving, has allowed for different degrees of interactivity with the students and for the students to just insert themselves into the content, as well.

When I asked Millie if she were bothered by conversations students had in the chats while she presented, she said no, that "that conversation that's going on is just as important as what I have to say." She recognized the value of what she called "adjacent conversations":

> If something that I'm talking about has inspired them to go ahead and start talking about something else, I don't have any problems with that at all. And I think that in my role, like, I don't really have lot of space in that role to kind of be like, hey guys, pay attention to me, you know. I don't feel like I have that kind of authority to even change that. As a presenter, like, that doesn't bother me at all, and I think it's actually valuable for them. You know, you're seeing a lot more of this going on in actual classrooms, too, um, especially in lecture type courses, where faculty are opening up some sort of back channel in the course…"

Millie went on to describe an example of a professor she had read about who used Twitter to enable back-channel questions from students to display on the screen behind her in a large lecture hall.

Millie did distinguish "adjacent" and "totally-unrelated" conversations among students in the chats, saying that she "caught" but ignored unrelated conversations, because she knew the moderators would "bring it back." If it were happening in every

chat room, she might ask herself what she was doing or what she needed to change pedagogically in order to re-engage the students. When I asked Millie if she could tell me moderator "techniques" she had noticed moderators using to manage interactions in the chats, she said she noticed that some moderators would "flat out be like hey let's bring it back to what's going on," but that moderators would also ask a question themselves, redirecting "the energy of the conversation" to the topic of the webcast, or would call people out, or would restate the main points she made. She did note that some rooms had more moderator presence than others but that for her, watching four at a time, it was a matter of "what she caught."

With Millie engaging most of the students most of the time in interactive and adjacent conversations in the webcast+chat, moderators could focus their energies on minding the verge. But with the condition of attending to the webcast+chat greatly "expanded" because of Millie's vigilant attention to the four chats, continuously monitoring students' reactions, acknowledging students' contributions, and asking questions of relevance to the students, the verge, as a peripheral zone, was greatly reduced and required less minding. This narrowing of the verge enabled two opposing action types on the part of the moderators: tending and branching.

Because moderators had little diverging among students to manage, they could tend to the webcast+chat along with Millie and the students, responding quickly to students' questions and facilitating the discussion with helpful information:

19:09:18	FH	what page are we supposed to go to?
19:09:40	Masumi	http://www.lib.xxxxxx.edu

19:18:00	DQ	so google books is a big database full of books
19:18:08	CY	google books is free
19:18:11	DQ	niceeee
19:18:11	FH	link?

19:18:13	DQ	awesome
19:18:15	DQ	Wow
19:18:17	Heike	google.com/books
19:19:28	DQ	so you have to buy the book in order to read a copyrighted book?
19:19:30	DQ	that sucks .....
19:19:32	Masumi	most books that have been scanned in Google books are still restricted by copyright, so google only shows you certain pages. but our library has an agreement with google where they are digitizing our books, and eventually those should be available, in full, in google books
19:19:37	FH	I'm going to look for my class books
19:19:49	BI	Niceeee
19:19:51	DQ	that makes sense
19:19:51	DQ	hey masumi u know when?
19:19:52	FH	aw it's there
19:19:55	FH	I spent all this money
19:19:56	Heike	it's also really handy for quickly searing for books on a topic.

With few students diverging – at least early on in the webcast – moderators could redirect students quickly and resume their tending:

19:16:26	KI	why do we get our grades back!!!
19:16:39	TC	why?
19:16:44	UF	when do we get our grades bak?
19:16:47	KI	when
19:16:53	UF	i dunno
19:16:56	UF	i wish i knew
19:16:58	BK	gosh the audio is terrible
19:17:03	DQ	it is
19:17:06	UF	yes
19:17:08	DQ	my voulme is on 100
19:17:08	BI	yeah
19:17:11	DQ	n i can barely hear
19:17:11	UF	stupid real player
19:17:12	Masumi	grades tonight...now back on topic!
19:17:19	UF	ok thanks..lol
19:17:36	Masumi	:) audio on quicktime stream is pretty good...
19:17:48	UF	:-(
19:17:49	Gamal	yes QT is working well.

One challenge to moderators, of course, when there is little demand for them to be minding the verge, is that they are more likely to engage in branching actions themselves. Little harm comes from branching outside the context of the section chats, as when silliness ensues in the staff chat while Millie and the students engage in the webcast+chat:

19:34:49	Drew	E - i'm having connection problems . . .
19:35:07	Evelyn	I figured that was the case with your signing on/off
19:35:13	Q (IT staff)	hard to get wireless under the bed with your cat...
19:35:14	Drew	:)
19:35:21	Drew	it's tricky
19:35:34	Drew	I have to leave in a bit to get a triple fish infused suspension antibiotic
19:35:42	Rae	huh
19:35:44	Evelyn	sounds awesome
19:35:46	Amari	Sounds yummy.
19:35:48	Evelyn	good luck giving it to kitty
19:35:59	Drew	allegedly they like them
19:36:05	Masumi	http://www.ietf.org/rfc/rfc1149.txt
19:36:12	Masumi	cats instead of pigeons
19:36:19	Masumi	it could work
19:36:26	Drew	so I'll see if I can get her to just drink it first, and if not, the eyedropper in the back of the mouth
19:38:09	Carson	pigeons are causing international problems http://www.freerepublic.com/focus/f-news/2111472/posts
19:39:34	Masumi	i hear there's a section in gitmo just for pigeons
19:39:45	Masumi	replete with waterboarding
19:39:50	Masumi	it's evil
19:39:57	Amari	Yikes!
19:40:02	Evelyn	i'd like to see footage of that
19:40:10	Masumi	i'm making shit up
19:40:38	Evelyn	I believe pigeon waterboarding is a national issue
19:40:39	Q	You realize that with WireCast, I can cut this conversation into the live feed...
19:40:41	Masumi	trying to get amari to giggle on camera
19:40:52	Q	THAT would make her giggle..
19:40:57	Masumi	peta is up in arms
19:41:08	Masumi	there she goes!
19:41:09	Amari	That would make the students entertained for sure!
19:42:51	Amari	PETA has arms?
19:42:56	Amari	I heard that they bite, too.
19:43:00	Amari	Petabyte!

19:43:16	Masumi	wow, now that is a pun...

When moderators engage in branching actions inside the section chats, however, because, perhaps, they are restless or bored or whatever, they run the risk of taking students with them on tangents unrelated to the webcast, thereby increasing the verge, resulting in increasing levels of diverging actions on the part of students. Masumi's occasional branching in webcast 4 illustrates this phenomenon. As the webcast carries on, instances of branching last longer and involve more students. In the last instance, GA Heike attempts to keep students attending, and Masumi recognizes his branching behavior with a light-hearted apology:

19:30:11	Masumi	i really like how millie can see what you all type :)
19:30:22	US	projector screen?
19:30:28	Masumi	plasma tv :)
19:30:31	MQ	that is a lot of stuff to look at

19:37:55	Masumi	off-topic: firefox rocks. especially with adblock plus: https://addons.mozilla.org/en-US/firefox/addon/1865
19:37:57	DI	search for the boost add on
19:37:57	DQ	how?
19:38:01	EQ	i think firefox works better
19:38:09	UF	it does
19:38:12	UF	its faster
19:38:14	EQ	Yup
19:38:19	UF	i hate internet explorer
19:38:28	FH	yeah it sucks
19:38:32	FH	especially for websites
19:38:39	MH	thanks masumi

19:47:10	Masumi	goooooogle (in a zombie voice) *[in reaction to Millie's comment in the webcast: "I saw somebody was saying that Google could rule your life."]*
19:47:18	MH	haha
19:47:18	DQ	hahahaha
19:47:24	EQ	google has so many different apps.
19:47:26	EQ	that's so cool

19:47:28	DQ	i wanna be google for halloween
19:47:33	DQ	hahha
19:47:39	MQ	i think im going to be hard gay
19:47:43	MQ	with my other friend
19:47:46	MQ	who will also be hard gay
19:47:52	BI	ookkk
19:47:55	FH	hmm
19:48:01	TC	WHAT?
19:48:03	DI	What
19:48:05	DI	>??????
19:48:05	FH	awkward turtle floating around
19:48:09	DI	Haha
19:48:12	MQ	you dont know hard gay?
19:48:19	DI	Nope
19:48:20	DQ	?
19:48:29	MQ	oh man
19:48:32	MQ	i must enlighten this room
19:48:37	DQ	Lol
19:48:41	Masumi	after the webcast, MQ, please :)
19:48:45	MQ	haha alright
19:48:45	US	Lol
19:48:49	Masumi	i would love to see millie's reaction, but seriously
19:48:55	MQ	Hahaha

19:50:29	LH	hey masumi what happens if we didnt sign into the chat room with our full name?
19:50:39	MQ	you leave and sign in with it =P
19:50:46	US	a kitten dies somewhere
19:50:57	DI	Whoa
19:51:05	SN	wow, thats so mean
19:51:10	TC	puppies are better than kittens
19:51:12	SN	i'm going to have to hug my cat now
19:51:24	FH	:)
19:51:27	MQ	...
19:51:31	Masumi	my dog is staring at the ceiling fan; she looks a little disturbed
19:51:32	Heike	we're almost done here. . .just hold on a few more minutes :)
19:51:39	MQ	yeah we're drifting
19:51:40	MQ	from librarians
19:51:47	DI	true dat
19:51:53	MQ	Slowly

19:51:55	Masumi	sorry heike :).

What does it mean to be a moderator? It means keeping students engaged with information and questions that are relevant to, and responsive to, them. It means striving to expand the webcast+chat and shrink the verge.

Webcast 5: Downloading? Watch out.

The final webcast of the semester was about copyright and featured Sol as Gezim's guest. As a member of the school's IT staff, Sol had helped develop the course and, as a national copyright scholar, had written the module on copyright that students completed for their fifth of six modules in the course. Webcast 5 followed the same format as webcast 4. Sol served as host-moderator with Gezim present to introduce him and occasionally comment or relay students' questions or concerns to him if he overlooked them on the big monitor. Amari moderated with Banji present but not active. There was just brief chatter in Amari's section before the webcast began:

18:57:21	Amari	Hi all.
18:57:46	Amari	If you are logged in with your username instead of your real name, please re login with your regular name.
18:57:55	EE	yes
18:57:57	QU	sounds good
18:58:12	NC	hey guys
18:58:40	BT	yo dawgs
18:59:09	Amari	The video is up and running if you are not already watching.
18:59:15	Amari	They will start talking in a few minutes.

Masumi moderated along with UA Gamal, but Heike was not present for webcast 5. The pre-webcast chatter in Masumi's section was typical greeting and smalltalking. After about seven and a half minutes of small talk with her chatmates and with Masumi, student TE, who had not been present for webcast 4, realized from Gezim and Sol's on-

screen chatter the presence of the big monitor, which introduced a slight disruption to her comfort level in the chat:

18:59:15	TE	aww man. they can see our class group chat now!?
18:59:17	TE	lol
18:59:25	SN	lol
18:59:26	TE	better watch my comments this time! hahaha.

(No other students had explicitly voiced their realization that the webcasters could now monitor all four chats simultaneously, but TE's comment perhaps indicated that over the course of the webcasts, communities among chatters in their sections had developed that could be subject to disruption with the introduction of new authority figures.)

Gezim, who was a new instructor and hosting a webcast for the first time, began the webcast with a brief introduction that inadvertently mischaracterized how the webcast was about to go:

> GEZIM: Alright, so, it looks like it's 7:00 now, so I want to, I know there's still a few of you joining the rooms, but I want to welcome you all to our final webcast of the fall semester, and I really hope that some of you who are new to our webcast right now. Several of you mentioned that you hadn't been able to make it on Tuesday nights, so I'm glad that you'll be able to enjoy at least one of our webcasts. Um, and I'm here today…um, I'm Gezim, I'm one of the instructors, and I'm here today with Sol, who is a copyright scholar [here] and various other places, and, um, ***we're going to be talking to you*** today about copyright, how it pertains to you, and lots of really important things that you need to know about copyright and how it relates to your own personal lives. So, I'm going to let Sol get started.

Students were not about to be *talked to*, as Gezim innocently phrased it, but were about to help create a meaningful dialogue about a topic of immediate and perhaps lasting relevance to them.

Sol began his remarks with a series of "hooks," forging a webcast+chat that kept students attending with only brief and sporadic diverging for an hour and five minutes, longer than any previous webcast:

SOL: I'll talk a little about a few things. First of all, I noticed from all these crazy chat windows that are open that not everyone has finished the module. And that's okay, but the module assignment in this module, it takes a little bit of work to get it done. So if you have a chance, finish the module as soon as you can, because you're probably going to have questions for your instructors. So, um, you know, start looking at it, because you want to have as much time to finish that module as you possibly can. Um, so, uh, there were a couple of links sent out today. One of them was about the newest copyright law to pass through Congress, which is the PRO-IP Act. And the other one was about one of the students, another student here, who was being sued by the recording industry. So let me ask you all, did you guys read those articles, so that we have a place to, uh, uh, start from. If you haven't, take a look. They're pretty short. Um, the other thing we're going to do today is do a little poll. Each section has its own individual poll. Your people will send you a link, your instructors, your TAs will send you to a link to those polls, and then we'll talk about the questions in those polls and the results. Um, thank you all for reading your articles today. That's awesome. So, instructors, could you paste the link to the polls in the chat rooms. This is something that we're trying new today. Um, it's basically a little "poll anywhere" kind of thing. Yes, you are voting.
GEZIM: Voting, yes.
SOL: In honor of yesterday's voting, who knows, but you'll be voting on certain questions, in the basically yes, no, or other questions, and go ahead and let's look at the links there. Or I can post them in.
GEZIM: Oh, I guess you can.
SOL: Oh, well, I'll post them in.
GEZIM: They'll get in there one way or another. [pause]

19:02:11	UF	Cool
19:02:14	OE	Cool
19:02:23	KM	Cool

SOL: Okay. So go ahead and click on them. When you select, when you look at that page, you'll see a poll. You can click yes, no, or the third option, for each poll. Alternately, you can text. At the results page you will see that it says you can textcast something or another. You can do that. You can send a text to 41411 with the word cast, and then whatever number is associated with that answer.
GEZIM: This is so exciting.

First, Sol expressed his knowledge of the module that students were working on, a module he wrote, and mentioned the links on the class Web site that students were to have read, which gave him a sense of authority about the topic of the webcast. He mentioned that one link was about "the newest copyright law to pass through Congress," which gave the webcast a sense of currency. He then mentioned the other link, about a student on campus who was being sued by the recording industry for sharing protected music files, which gave the webcast a sense of urgent relevance to students, many of whom practiced illegal file sharing without any understanding of the law. Finally, Sol mentioned the new polling application that the IT staff was trying that night, which added some novelty to the webcast. From those first comments and questions, Sol initiated a webcast+chat that, like Millie's in webcast 4, was responsive to the directions students

took in the conversation but, unlike Millie's, was not bound by any pre-determined points of discussion.

Sol and I discussed his strategy in our interview. He said he likes to find two articles of interest to assign for pre-webcast reading, and he starts the webcast with a question about each, just to get the conversation going:

> That doesn't take too long. The majority of the time is taken by students asking *their* questions or sharing *their* experience or doing stuff like that, and the instructor and I will try to answer the questions the best we can. One of things I do that I don't know if everyone does is I'm in every chat room, and I want to make sure that I get to all the students' questions. I want to make sure that I see, you know, all the students questions, whatever.

When I asked Sol, as I had asked the other interviewees, if he were bothered by tangential or diverging actions in the chats, he said that "in taking students' questions, students are engaged, they ask interesting questions and make useful comments, so there's no behavior problems." He qualified his statement with "if somebody gets off topic, usually the TA is in the room, will say, you know, try to stay on topic, but mostly everything said is relevant to the discussion." When I asked if he ignored "off-topic" chatter as a way to manage the behavior, he said he did not: "There's so many legitimate questions going on, I probably end up ignoring some of those side comments, but it doesn't really bother me much."

Very few "side comments" occurred in webcast 5. Moderators spent most of their time in the staff chat sharing students' questions and discussing information they could share to help facilitate the webcast+chat. At one point, moderators were all so busy tending to the webcast+chat in the section chats that for six and a half minutes no one contributed to the staff chat at all. The instructors, particularly, tended to the dialogue that developed between Sol and the students, contributing brief clarifying remarks where they could or participating in the dialogue as collaborators more than as moderators. Even on

the rare occasion or two in each section that the instructor attempted to inject some levity into the discussion, students balked at diverging and returned quickly to the discussion. In a discussion of the threat to Web radio posed by industry increases in statutory copyright fees, the music site Pandora.com came up, but students did not react to Masumi's pun:

19:27:09	DQ	i have yet to use pandoras box
19:27:17	KK	it's just Pandora
19:27:19	Masumi	don't open it! :)
19:27:21	DQ	or pandor
19:27:23	DQ	hahah..sorry
19:27:31	CY	Yes
19:27:37	DQ	Nope
19:27:39	DQ	nope
19:27:41	UF	No
19:27:43	OE	No
19:27:43	SC	No.

Instead, students responded to Sol's question about whether the PRO-IP Act was necessary. Amari branched briefly in a side comment related to the ongoing discussion of Digital Rights Management, but students adhered to the evolving dialogue as it moved on to a new topic:

19:21:07	Amari	I can't rip my Ryan Shupe and the Rubber Band cd onto my computer.
19:21:09	Amari	:-(
.		
.		
.		
19:22:00	Amari	Bad Sony!

Moderating means engaging students with *their* questions and *their* experience.

Power and Perception

One question I asked each interviewee was who had the most power in a webcast, the webcasters? moderators? students? the IT staff who made the equipment work? My intentional use of the word "power" rather than "authority" prompted some thoughtful responses about the perception of power and influence in webcasts+chat. I added the question to the interview protocol fairly late in my preparations to interview, after considering whether an individual actor in a webcast could have enough influence to effect changes in the larger social sphere, in a social-ecological way, or in the sense of creating a social dilemma.

The two teaching assistants I interviewed placed the power outside themselves. Jing, who had been a student in the course and was a UA (and a guest) said that guests had the power (although she considered herself a moderator, not a guest.) Moderators ranked low in power: "Very little of what I contribute is original to myself," Jing said, referring to her role as a moderator. "Guests manipulate the topic, the flow of the conversation, and define how good the webcast will be." When I asked her how she knew if a webcast were good or not, she said she recognized "the subjective nature of good" but could list the best webcasts, knew what they were, and knew they were good because of the guest, not because of great questions from the host or great insights from the students (although, she said, there have been some great insights from students). "The best ones were with the best guests; the worst ones were with the most confusing guests."

Heike, a GA, believed instructors in the chat had the most control, changing "power" to "control." To Heike, whoever was in control had the power: "If Masumi's in the chat, he has control. If he's not, no one's in control." With no one in control, Heike said, the webcast was guided by the presenter, either positively, in the case of Boma, who

was “interesting and engaging,” or negatively, “if the presenter is boring.” (Heike dared not name any boring presenters.) “If people aren’t engaged, then side conversations are in greater abundance,” Heike said. When I asked about the moderator role, Heike said it changes from webcast to webcast depending on how engaging the presentation is. For example, with Boma, because he was interesting and interactive, the students needed less control and more “informational support.” With a less engaging presentation, there were more side conversations and “off-task behavior.”

The two instructors placed power with the host moderator, a role they both had played multiple times. Masumi explained his view on power:

> The instructor on video has the most, then the person being interviewed, because they’re usually saying the most. But they have no power over whether anyone’s listening to them, and they’re often people unfamiliar with the setup, so they’re not quite sure how to deal with a group of invisible students. Instructors must always keep in their heads how this is affecting the students. The other staff are random police officers that go around and ensure decent behavior. Students don’t really think about them being there that much.

Amari also said that the on-camera moderator had the most power. The host moderator determines how the discussions and chats go, “creates an optimal setup or not,” manages guests, builds in elements of interactivity, something to “pull students in,” such as “Q&A, visual aids, an activity.” Like the teaching assistants, the instructors placed power wherever there was an actor manipulating, controlling, or “making” people do something.

The two individuals who led webcasts with the most attending and the least diverging both placed power with the students. Sol, who liked that I asked the question, said:

> I will give you a strange answer. The instructors have a lot of power, but the students have a lot of power to make a successful webcast. It’s the interaction part that makes it worthwhile, and it’s the thing that keeps them engaged and interested in the subject. Students have a lot of power over that [interaction] in aggregate.

When I followed up with Sol in a brief phone conversation the day after our interview, I asked him how he knew if a webcast were "worthwhile." He said when the students were engaged and learning something. When I asked how he knew if students were learning anything, he said "from the questions they ask," or from follow-up questions to his answers, or when they made "lots of comments." One thing I noted in Sol's dialogue with students was how "straight" he played it. All other webcasters at some point employed some attempt at levity, sarcasm, or play. I asked Sol if he consciously avoided sarcasm and play. "Yes," he said. "It comes from having done many webcasts. I avoid it so nobody is left out."

Millie also said students had the power, "by sheer numbers and the fact that they're in their own space." At first I thought she meant "their space" as the virtual world, our having appropriated chat, for instance, as a teaching "space," but she meant where they were physically: "Without sharing physical space, students receive no physical cues from their instructors."

Amari spoke at length about physicality in her interview. Amari, who was the only participant in the study who had had any classroom teaching experience, described how managing multiple things in a webcast differed from managing multiple things in a classroom:

> There is a proximity thing that goes on, because you can feel when the students are moving around when they're not supposed to be, you can feel the air, the anxiety level in a classroom go up. It's a real intuitive kind of thing. You can, unlike in chat, you can hear the children's voice inflections, the students' voice inflections, so you can figure out, are they getting too anxious to complete this correctly, are they getting silly, do I need to pound down on this at this point, because are they getting out-of-control silly, or is this just something I can let pass? All those cues are missing in a chat system, so you're trying to extrapolate from just words on a screen while you're trying to attend to two other, at least a minimum of two other things, you're trying to extrapolate how this is going with the students. I also found, and I find it completely across the board in this course, that one of the biggest things I'm missing is being able to tune into the emotional

> aspects of my students. It's a huge problem for me. It's one reason why I try to get 'em into my office. It's the reason I tend to do a lot of emailing back and forth with them. I do a lot of probing questioning, because there's, I just can't, and I feel personally sad when I lose a student, when a student drops, because I'm like, if I could have figured out what was going in that kid's head, like, I could have maybe in a regular classroom – not to say I've never failed with a student in a regular classroom – but I felt like I had an opportunity, and here sometimes I know that that student's never contacted me once, and I know that it's on them, they're grown adult people now, but in our society they're really not.

Amari's description revealed a conflict that is central to assuming the role of a moderator in the webcasts, a conflict between holding or relinquishing agency or power in a learning environment, between controlling the ongoing actions or allowing experience to unfold unchecked. Moderators, in seeking to resolve the conflict, waver somewhere between the extremes of power. Moderators' preconceptions of an ideal learning environment, moods and energy levels during a webcast, perceptions of students' converging, attending, and diverging actions in a webcast, and responses to other moderators' actions all affect how moderators go about minding the verge. In the following section I specify in detail what it means to mind the verge.

BEING A WEBCAST/CHAT MODERATOR MEANS MINDING THE VERGE

My aim in this study was to shed some light on the phenomenon I call a webcast+chat and answer the following question:

What does it mean to be a moderator in an interactive webcast?

To that end, I studied the records of a semester's worth of interactive webcasts and gathered reflections from people who participated in them. I shall summarize what emerged from the study in a simple answer to the question before explaining the answer more fully. Moderating in an interactive webcast means *minding the verge*.

An interactive webcast in the context of this study consisted of two main loci of interactions for which I could produce graphical records: webcasts and chats. Both had temporality, which I could trace in their records. I could say of both that they started at a specific time, persisted, and stopped at a specific time. Both had human actors without whom they would not have existed. That webcasts and chats occurred simultaneously is of little concern except in the ways they connected. When a webcast and chat connected – when actors in the two separate loci began collaborating in a dialogue – a third locus of interactions came to be, an interactive webcast, or a webcast+chat, for which there are no graphical records. I cannot trace the temporality of a webcast+chat in an extant log or other medium. I must try to create some graphical conceptualization of it to explain the nature and extent of the connections in it.

If we situate a webcast+chat within human social activity, we can depict it as a realm within a larger sphere of sociality. "Realm," which has its roots in the Latin *regimen*, connotes a regular, prescribed course of actions. In the case of a webcast+chat, one enters the realm only by having presence in a chat, which requires a course of actions in order to effect. One must have an account on the server, be at an Internet-connected computer, and have logged in to a chat room. One must also have opened a media player and navigated to a URL for access to a streaming Web-based broadcast, or webcast. Some enter the realm as students, some as guests, and some as moderators. Guests and moderators enter the realm for the benefit of students, without whom a webcast+chat would be pointless. Some moderators occupy chats with students, some moderators occupy webcasts with guests, and some combine both as simultaneous host and chat moderators.

In order for there to be a webcast+chat, human actors "move" through three conditions of interaction: converging, attending, and diverging. In converging, one moves

from the larger sphere of sociality into a chat or into a webcast, or into both. In attending, one creates and maintains a connection between a webcast and a chat. In diverging, one disconnects from the webcast or chat and either maintains presence in one or the other or moves back out into the larger sphere of sociality, out of the realm of the webcast+chat. Chats occupy a periphery between the larger sphere and the webcast+chat, and webcasts occupy a periphery between the larger sphere and the webcast+chat. These peripheries are the verge.

Students and moderators converge in a chat through bonding, orientating, and guiding; attend through guiding and tending; and diverge through branching. Moderators and guests do the same in a webcast. We can depict the actions of students and moderators as they move temporally through the chat as lines of actions that follow irregular, semi-sinusoidal patterns [] through the verge that borders the webcast+chat. We can depict the actions of moderators and guests in a webcast similarly. The areas of relative convergence, attendance, and divergence create the verge and the webcast+chat (see Figure 4.1).

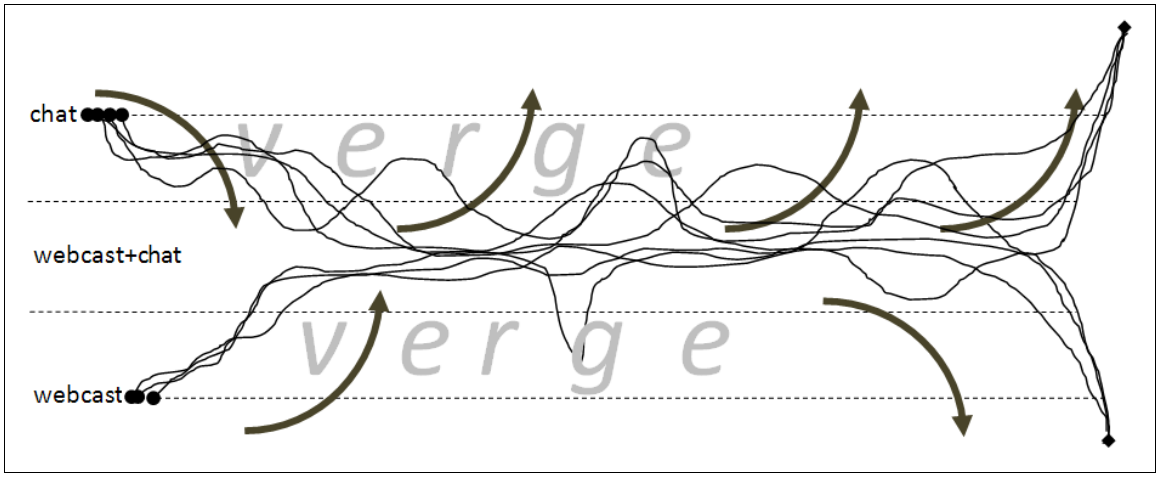

Figure 4.1: Idealized depiction of the verge

What does it mean to mind the verge?

Students, moderators, and guests come together to create a webcast+chat, sometimes with no expectations, but often with preconceptions that the webcast+chat challenges. Moderators assist students with bonding and orientating during convergence and then with guiding into attending to the webcast+chat, but once students increase their comfort, once they "figure it out," they exercise increasing power in the realm. Moderators find themselves in a micro-dynamic environment that places great demands on their attention and "stretches their abilities" (as Amari depicted it) as they perform their roles with students who are in various conditions of converging, attending, and diverging.

Minding the verge means splitting one's attention: sometimes shepherding students through their converging, sometimes staying out of the way of students in their attending, and sometimes monitoring stray students in their diverging. Minding the verge means being organized yet impromptu, structured but fluid, focused but flexible. It means coordinating connectivity and interactivity and finding strategies that work in the moment, like branching in order to stem diverging. Minding the verge means engaging students with information and questions that are relevant to, and responsive to, them: *their* questions and *their* experience. It means striving to expand the webcast+chat and shrink the verge.

When host moderators and/or guests recognize that they are powerless to make anything happen, that students have the power to create something meaningful out of the webcast+chat if they are engaged, the size of the verge decreases as more students attend to the webcast+chat. When host moderators and/or guests assume the power to make something meaningful happen, the size of the verge increases as more students diverge, exercising power and seeking meaning outside the webcast+chat.

The extent to which moderators recognize and manage the various conditions of interactions in a webcast+chat determines how successfully they mind the verge. Indications that moderators have successfully minded the verge include their own collective sense that a webcast+chat went well, that most students attended most of the time during a webcast+chat, that frustration levels at the conclusion of a webcast+chat were low, that guests admitted a sense of connection with the students, and that students commented during and after a webcast, and in their reflections, that they gained knowledge that will benefit them in their school and everyday life information needs.

So far I have described a theory of what it means to be a moderator in a webcast+chat, a theory that is grounded in my interpretation of a great number of data, but the theory has value only if it holds up to specific evaluation criteria, which I discuss in the following section.

EVALUATING A CONSTRUCTIVIST GROUNDED THEORY

The process of theorizing in a constructivist grounded theory study (or any study) must take into account the criteria by which others will judge it. I adopted techniques and strategies for assuring that the resulting theory is *credible* and *plausible*. I produced credible and plausible results through prolonged engagement with the participants in the phenomenon, persistent observation of the phenomenon, the triangulation of data sources, peer debriefing, and member checking (Lincoln & Guba, 1985). I also encouraged full and open cooperation with study participants by assuring that information they shared with me would remain *private*, *confidential*, and *secure*. Finally, I strove to recognize *limitations* to the study in terms of the nature of the methodology I chose, the data I derived from the phenomenon, and the effects of my association with the participants.

Credibility

I had more than two-years' experience as a convener of and participant observer in webcasts before starting the study. I used quasi-field observation methods – observing the experiences of webcast participants as recreated by media files and chat logs – to study the phenomenon over time, including a pilot study of data from a single section of the course I instructed in the summer of 2008 and the current study of two sections from the fall of 2008. I triangulated data collection by analyzing data from multiple sources: media files and transcripts from five webcasts, chat logs from fifteen chat rooms, ninety-six reflections students wrote in response to their experiences, and six interviews with moderators.

Plausibility

Member checking assured that my analysis accurately and somewhat fully portrayed the studied phenomenon, and that the theory made sense to participants who shared the experience. The theory is plausible and relevant if it gives participants deeper insights about their experiences and some conceptual language with which to talk about it. I shared the "verge" figure and the three categorical tiers with members of the instructional staff I had interviewed and explained the process I went through in the method to derive them. Then I explained to them what it meant to "mind the verge." During the ensuing conversations, members began adopting the language with which I had described the phenomenon, speaking about how and why students, or they, diverged, or what attending looked like, or difficulties they had with converging. Jing said she thought "minding the verge" captured the way she thought about webcasts: "It's always interesting to see something you know or experience explained – like learning the name of something you've always just known." Masumi felt I had conceptualized the "verge" well but was more interested in the role power played in moderators' actions: "My

favorite part is the bit about power at the very end. To me, at least, that's the most important take-away from this study: the exercise of control can have the opposite effect."

Millie liked the visual depiction of the verge (see Fig. 4.1), which she described as "incredibly accurate" and noted that "the lines look familiar, like the way the energy feels when you're doing it. It's a perfect representation of what it feels like to be in a webcast." All members suggested that the class instructional staff adopt the study summary I shared with them, including the visual depiction of the verge, for use in training new teaching assistants and instructors unfamiliar with moderating. As Heike said about moderators, "They don't know where they're supposed to be." As yet, no explicit description of moderators' roles or expectations exists. It is my hope that this study helps explain the role of moderators, helps moderators anticipate the complex nature of interactions in a webcast+chat, and helps provide instructional staff with some conceptual language to use in talking about what it means to be a moderator in a webcast+chat.

Privacy and confidentiality of participants

In talking with study participants, I assured them that information they shared would remain private, confidential, and secure. I conducted all interviews in private. Conversations in the webcasts and students' written reflections are not strictly private because they exist on a server accessible to several members of the course instructional staff and school IT staff; however, I anonymized all references to the course, school, and university, and I used pseudonyms for all the names of instructional staff and guests and for all the initials of students.

Confidentiality of the research data

I keep the research data on a password-protected laptop computer that remains either in my immediate possession or in a locked office or home. I have a backup copy of the research data in a password-protected account on the school server. I erased all audio recordings from the digital voice recorder once I transferred them to my laptop.

Limitations of the study

Constructed grounded theories, by nature of the methodology and data used to construct them, are substantive theories. They address delimited problems in specific substantive areas, which constrains their transferability and usefulness outside the area studied. The phenomenon I studied is the unique result of a group of people who built "in house" a means for combining media to create a virtual learning environment. Furthermore, for this study I collected and analyzed data from two of four class sections of an online undergraduate class during a single semester. Given the dynamic nature of humans in groups, I cannot account for differences that may exist in other sections or in other semesters.

Many actions occurred that I could not observe. I had no record of students who logged in to chats but did not interact, for example. I could not account for how students' local environments may have affected their actions in the webcast+chat nor how relationships among students outside the class affected their actions in and reflections on the class.

All researchers hold preconceptions that influence to some degree the methods they choose and the way they interpret data. For example, I had been "constructing theory" about the phenomenon for two years or more in conversations with my colleagues, some of whom became study participants, so I cannot separate all that emerged during the study from what may have evolved over my tenure as an instructor

for the course. Also, the early emergence of, and my stubborn adherence to, a model of the verge may have limited other possible explanations.

Finally, I cannot discount the effect that my own association with course may have had on the people I interviewed, all of whom know me as a former instructor struggling to complete a study on the webcasts. To some I am a friend and colleague, so our relationship could have increased their tendency to accept my explanations as plausible. To others I am a senior peer and a figure of some authority, so power may have influenced their opinions and their willingness to share, shape, or withhold information in the interviews.

DISCUSSION OF RESEARCH

Chapter 5: Discussing Theory in a Broader Context of Learning

Among the criteria for evaluating a grounded theory study is the extent to which it is useful. Does it offer interpretations that people can use in everyday life? Do the substantive analytic categories suggest generic processes? Can the analysis spark further research? How does the work contribute to knowledge, or make the world a better place? (Charmaz, 2006, p. 183). In this chapter I briefly discuss the substantive and theoretical implications of the study for the course specifically and for online learning in general.

SUGGESTING ACTIONS FOR FUTURE WEBCASTS+CHAT

Some of what emerged from the study include suggestions for substantive changes in the way the instructional staff plan and manage webcasts+chat. The conflict that arises from the webcasts+chat is partly due to a difference between two philosophical approaches to teaching that comprise the course as a whole but that instructional staff remain largely unaware of. As far as I know, the originators of the course had no formal education in pedagogy or instructional design, other than a required course in college teaching methodology. Among the instructional staff with whom I worked from spring 2006 to fall 2008, only Amari and I have extensive education and experience in instructional design. That the design of the course relied on no explicit, sound pedagogical frame remains its greatest weakness. As Amari suggested, it is as if the designers created a rich online textbook of sorts, complete with objectives and learning materials in text, illustrations, video and sound but without instructional strategies to guide them, strategies that teachers employ to point students in the right directions, guide

them, and then measure their success against learning objectives. As the course operates today, nearly all of the learning objectives, course materials, and assessment tools reflect a sort of accidental objectivist, directed-instruction approach to, or model of, teaching and learning. The webcasts+chat (and partly, as of summer 2009, the use of Twitter) represent an accidental constructivist approach to, or model of, teaching and learning.

Roblyer and Edwards (2000) summarized the needs and problems opposing teaching/learning models address as well as what the models tend to do (See Table 5.1).

	Directed Instruction/Objectivism	**Constructivism**
Addresses…	1. *Individual pacing* and remediation, especially when teacher time is limited 2. Making *learning paths more efficient*, especially for instruction in skills that are prerequisite to higher-level skills 3. Performing *time-consuming and labor-intensive tasks* (e.g., skill practice), freeing teaching time for other, more complex needs of students 4. Supplying *self-instructional sequences*, especially when teachers are not available, teacher time for structured review is limited, and/or students are already highly motivated to learn skills	1. Making skills more relevant to students' backgrounds and experiences by anchoring learning tasks in *meaningful, authentic, highly-visual* situations 2. Addressing motivation problems through *interactive activities* in which students must play active rather than passive roles 3. Teaching students how to *work together* to solve problems through group-based, cooperative learning activities 4. Emphasizing *engaging, motivational activities* that require higher-level skills and prerequisite lower-level skills at the same time
Tends to…	1. Focus on teaching *sequences of skills* that begin with lower-level skills and build to higher-level skills 2. Clearly state *skill objectives* with test items matched to them 3. Stress more *individualized work* than group work 4. Emphasize *traditional teaching and assessment* methods: lectures, skill worksheets, activities and tests with specific expected responses	1. Focus on learning through *posing problems and exploring possible answers* 2. Pursue goals that specify *general abilities*, such as problem solving 3. Stress more *group work* than individualized work 4. Emphasize *alternative learning and assessment* methods: exploration of open-ended questions and scenarios, performance checklists

Table 5.1: Comparison of objectivist/directed instruction models of teaching/learning with constructivist models as to the needs and problems each addresses and to the characteristics of each, from Roblyer & Edwards, 2000, pp. 51 & 53.

That the course combines the two models for instruction is not problematic, since many successful educational programs borrow strategies from both, but it is problematic that the course combines them in an unplanned way, without integrating them to exploit the best strategies of each to achieve a unified objective or set of objectives. For example, one of the primary objectives of the course is for students to "to create and maintain [their] own Web pages with XHTML and CSS" by writing "valid[14] XHTML (eXtensible HyperText Markup Language) and CSS code." The way students work to meet the objective follows a distinctly objectivist approach to instruction: a student, working alone, views within the Web-based course module an illustration of the model Web page he must reproduce; he chooses to follow instructions in text within the Web-based module or within a video tutorial linked from the Web-based module, or both, and recreates, step by step, the model Web page with some personalization. According to the Roblyer and Edwards' summary in Table 5.1, the work in the course module allows for individual pacing (within a two-week time limit for a module), provides multiple pathways (text, video, individual instruction if requested) for learning a skill or skill set, is predominately self-instructional, and is expressly individual work. A valuable instructional strategy that the course module work omits within the directed instruction model, however, is a summative assessment of the skill set. Students reproduce what the module material presents them, but the module does not ask them to apply the skill set in creating an original Web page on their own that varies in organization or structure from the model.

[14] The term "valid" in this context refers to markup language that conforms to standards based on a specification provided in the document code; e.g., an XHTML document that conforms to a specified document type declaration in the language used to create it is valid. The World Wide Web Consortium (W3C) issues standards for particular document type declarations. The W3C also offers a "validator" that allows a Web developer to check a document's language for errors. Students in the course use the validator to check their Web documents for validity. When the validator returns no errors, the document is valid.

During the module in which students first begin to create their Web pages, instructors host the first webcast+chat of the semester. The webcast+chat represents the only opportunity students have for group interaction and provides an opportunity to integrate the work from the module into a constructivist learning activity. What has happened in the past, however, is that students find ways to turn the first webcast+chat into a constructivist activity in spite of the efforts of the instructional staff, who traditionally use the webcast to introduce themselves and then lecture about material from the "orientation" module, which students have already read and for which students have completed a traditional assessment, an orientation quiz. The students generally diverge from the lecture and practice among themselves unguided interaction that adheres to another of the primary objectives of the course, "to communicate with others using a variety of Internet tools such as blogs, instant messaging, and streaming media." The instructional staff would serve the students better by integrating the work students have already done into a carefully planned constructivist activity. Staff could, for example, introduce themselves, then pose authentic, meaningful, motivational questions or problems that would require students to be active in their responses and to share among each other possible or experienced answers or solutions. Staff might ask, for example, what about the orientation students found most problematic or of greatest concern; or staff could pose a likely problem students face in developing their first Web page and solicit possible solutions from the group, all the while discussing developing group communication behaviors and norms. In order to make such a change in what has become a tradition in the course, the instructional staff must begin in their weekly meetings to make instructional strategies explicit. In this way, the differing instructional approaches and strategies become much more balanced for students moving between the individualized, skills-based work of the course module and the group, collaboratively-

constructed work of the webcast+chat. Ultimately, instructional staff should petition for time to evaluate and reconstruct the course to achieve a holistic approach, whereby all the activities of the course, whether directed or not, move students toward a unified and personally useful objective.

The suggestions that follow address other ways that the instructional staff can immediately make the constructivist use of webcasts+chat explicit and balanced with the directed instruction used throughout the rest of the course. One suggestion is to provide a better description or depiction of how the webcast works, as far as what equipment students need, whom they should expect to see or not see when they participate in the webcast, and how their presence in and contributions to the chat affect how instructors assess them. Students spend the majority of their time in the course working alone, reading Web-based text and following tutorials in text or in video to mimic the sequence of actions required to build and add elements to their Web pages, or to learn how to install and operate a specific communication application. For only an hour or so every other week, students who choose to participate in a webcast find themselves in a dynamic and interactive new environment and, at least in the beginning of the course, cannot work together until they learn how to navigate in the new environment. Instructors do some pre-engagement work already via the course home page, but, if instructors make the expectations for the webcast and evaluation more explicit, students may be able to move to a condition of interactive attending faster and easier.

Instructors should also make the learning objectives for the webcasts overall, and for individual webcasts, explicit in the instructions. In part, the lack of clear objectives for webcasts prompted this study. Students should expect to know what it is instructors want them to "get" from a webcast. Moderators, too, should expect to know what instructors expect of them, so some discussion among the instructional staff should result

in explicit definitions for the roles moderators are to play in the webcasts, including the limits to which they should allow diverging actions that are related to the webcast+chat. Instructors, in their roles as chat moderators for example, often struggle with whether they should collaborate actively with the host moderator and guests to engage students in active learning, such as in asking open-ended questions or in presenting problems for discussion when, in those roles, they should devote their energies toward facilitating the actions of the host moderators and guests. In other words, instructors often initiate divergent threads by asking the students questions they think contribute to the webcast overall rather working to keep the students focused on the host moderator and guests. Just as teammates on any sports team must know and play their roles if the team is to advance to victory, moderators in the webcasts+chat must know and play their roles if the webcast is to be optimally successful.

Another suggestion is to pause occasionally for re-convergence. The host moderator should actually say, "Okay, now we are going to pause the webcast for 30 seconds to allow everyone in the group to get back on the same page. Please signify your presence with an asterisk, Shift-8." Or something to that effect. In webcast 2, Masumi does something similar to assess how his students are doing:

19:37:42	Masumi	*meta question: how are we doing in here? i know there's a lot of different conversations going on and it's a bit hard to discuss and follow the rapid talk on the webcast, but i think you all are doing a wonderful job *

Unfortunately, Masumi posed the question as a chat moderator, when it should be the role of the host moderator to call for everyone's attention. Periodic group re-convergence would help shrink the verge and expand the webcast+chat, freeing the chat moderators to focus on facilitating the conversation rather than on minding the verge.

A final suggestion is to design every webcast+chat with the successful format of constantly keeping students engaged through open-ended questions about topics that

students will find relevant and will want to ask questions about. In webcast 1 keep students engaged by talking about general school-related or module-related topics that will lead to students asking questions in return. In later webcasts introduce module-related topics in the same way, to mimic the formats of webcasts 4 and 5. Stay focused, talk and type fast, answer every question, and skip the joking and sarcasm. Such a design works because it adheres to principles of constructivist learning, which promotes a student-focused and -centered approach to designing learning environments. To that end, the instructional staff should consider adopting an instructional design template or checklist for webcasts that adopts the language and sequence of constructivist instructional design adapted for synchronous online instruction.

In the introduction to this study I stated that other studies of online learning reflect a nascent but growing field of inquiry. Before suggesting a particular instructional design template or checklist for the course's instructional staff to adopt for webcasts+chat, I shall say where in the larger context of learning theory and in the growing field of online learning theory minding the verge in webcasts+chat fits.

PLACING WEBCASTS+CHAT IN A LARGER CONTEXT OF LEARNING

The results of this study – that students exist in three conditions of interaction in webcasts+chat, that interactions exist in three loci during webcasts+chat, and that moderators employ a variety of actions to manage interactions in webcasts+chat in order to mind the verge – focus on interaction as the key to an individual's development of meaning, placing the study in the larger sociological context of Blumer's symbolic interactionism. Since the webcasts+chat exist to extend instruction in the course, we should like to know where the study exists in the larger context of learning theory. Vygotsky (1962), among others, stressed the critical link between the expression of ideas

and the ongoing development of thought and understanding. The written expression of the webcasts+chat, the conversation that ensues in the chats, fits well into the category that Vygotsky called written speech. Students and moderators in the chat must render written speech, which requires of the interlocutors a challenging level of "deliberate semantics – deliberate structuring of the web of meaning" (Vygotsky, p. 100), at or near the speed of oral speech, which is less detailed and more compacted. Any individual's ability to do so effectively is subject to her having developed the ability through learning and practice. Often students are more adept at it than instructors. In Vygotskian terms, the interactors in a webcast+chat exist at many levels of ability, or in many different *zones of proximal development*. One role of the moderator in minding the verge is to recognize that students, and, often, the moderators themselves, need to be challenged by individuals with higher ability levels in the context of computer-mediated, text-based communication in order to effect the optimal level of seamless attending.

When students and webcasters engaged in an open-ended dialogue, the result was unpredictable but expansive, as students became deeply involved as collaborators in the construction of knowledge that was important to them. Carl Rogers called the result of such open collaboration significant learning, learning that makes a difference, whereby the learner comes to see herself differently, accepts herself and her feelings more fully, becomes more the person she would like to be – more flexible in her perceptions, more realistic in her goal setting, more mature in her actions, and more accepting of others (Rogers, 1961, p. 280). The challenge to moderators in the verge is to recognize when diverging behavior among students reflects collaborative, significant learning outside the current aegis of the webcast and to somehow suggest how students might incorporate the divergent discussion with the ongoing discussion in the webcast+chat, effectively sharing the potential for significant learning with more students.

Instructional staff might also consider how webcasts+chat serve as boundary objects (Star & Griesemer, 1989), accommodating the varying perspectives of students, staff, and guests as their communities of practice intersect. Often in the webcasts+chat, students from computer science and moderators from the school of information would use the webcast+chat as an instantiation of how their fields intersect, and differ. Staff should consider when and how to integrate community-building insights among a handful of students into the larger webcast+chat in order to help facilitate communication across disciplinary cultures. Staff may also consider the extent to which the course instructional team functions as a community of practice (Wenger, 1998), and how that might affect how they bring new staff into the community. Heike alluded to limited peripheral participation when she said in her interview that she watched instructors and other GAs in the chats to learn how to deal with "inappropriate behavior." If staff verbalized in staff meetings that limited peripheral participation is a viable strategy for learning how to mind the verge, staff would likely see more consistent actions among moderators new to the webcasts+chat.

Among the challenges moderators face is to view multiple concurrent actions from a variety of perspectives in order to know how best to deal with them. Given the micro-dynamic nature of a webcast+chat, moderators must make decisions about their moderating in seconds. In order to make good, helpful decisions, moderators must be mindful of their actions and of the possible motives behind the actions of others. Langer (1993) expressed mindfulness as a teaching strategy. The webcasts+chat offer staff and students the opportunity to avoid the kind of learning that Langer said results in "premature cognitive commitments" (p. 45), or learning that leads to rigid beliefs and mindless acceptance of information. If staff understand the importance of embracing variability and conditionality in the way they analyze the actions of students and in the

way they frame their responses to students, staff would experience less anxiety in minding the verge, and students would have more fun knowing that moderators are unlikely to judge their interactions as "wrong" or out of context (to an extent.)

Snow (1997) advocates adaptive teaching for managing the ever-present and often overwhelming individual differences among students (p. 355). Adaptive teaching recognizes a host of strategies for managing differing aptitudes in a group of learners, which Snow reckoned as "a function of the interaction between persons and situations, not of persons or situations considered separately" (p. 356). Moderators in webcasts+chat would become more mindful and better equipped for adapting to the varying needs of students if they consider what Park and Lee (2004) call aptitude variables and instructional implications (pp. 655-658):

- *Intellectual ability*

  Students relate to and benefit from interaction that matches well with their intellectual abilities; e.g., students with "crystallized" intellectual abilities respond to instruction that is familiar to them, while students with "fluid" intellectual abilities relish new or unusual methods. Moderators should be aware that students who do not respond well to them may respond better if the interaction changes.

- *Cognitive styles*

  Students vary in their modes of perception and reaction independent of their intellectual abilities. Moderators should be aware that some students are more or less independent in their thinking, reflective or impulsive, haptic or visual or verbal.

- *Learning styles*

  Students also vary in the ways they handle learning tasks, and models of learning styles classify students as holists or serialists; conclusion oriented or description

oriented; print oriented, aural, oral-interactive, visual, tactile, motor, or olfactory; and in other ways as researchers continue to study how to identify and measure learning styles. For moderators, it is enough to recognize that individuals manage learning tasks in different ways.

- *Prior knowledge*

  Moderators should recognize that a student's prior achievement affects the student's need for instructional support. Prior knowledge effects are subject specific, however, so moderators need to be aware that because students performed well in a webcast on *x*, they may not necessarily perform well in a webcast on *y*.

- *Anxiety*

  Moderators also must be aware that high anxiety diminishes cognitive ability. Some students may find that the webcast+chat environment produces anxiety, so moderators need to be aware that students who may be languishing in the verge are there because they are anxious and unable to keep up cognitively.

- *Achievement motivation*

  Students respond to motivation differently depending on changes in the learning environment. Moderators need to recognize not only that some students are better motivated extrinsically and others intrinsically but also that a particular student is better motivated extrinsically in some situations and intrinsically in others.

- *Self-efficacy*

  Self-efficacy describes a student's evaluation of his own ability to perform a task. Moderators must be aware of the effect that self-efficacy has on a student's approach to learning in a given context and that self-efficacy changes with experiences of success or failure.

It is unlikely that the instructional staff will ever have a full understanding of any student's aptitude variables, but it is vital to the success of webcasts+chat as a teaching tool that all instructional staff understand the many different ways that students may differ in their approaches to learning. When faced with unresponsive students in the verge, moderators may simply have to adapt the language they use in order to effect different aptitudes and reactions from the students.

If, so far, the learning theories listed seem to lack definition and structure, it is because a constructivist approach to learning embraces uncertainty and ambiguity, which is a common criticism of constructivist approaches to learning and instructional design. Often instructional design conjures a carefully ordered, systematic approach to instruction. Robert Gagné gained prominence as a proponent of a systems approach to instruction. Gagné combined earlier behavioral and cognitive theories of learning to develop practical guides for designing optimal conditions for learning. Perhaps the best known of his guides are his nine "events of instruction":

1. Gaining attention
2. Informing the learner of the objective
3. Stimulating recall of prerequisite learning
4. Presenting new material
5. Providing learning guidance
6. Eliciting performance
7. Providing feedback about correctness
8. Assessing performance
9. Enhancing retention and recall (Roblyer & Edwards, 2000, p. 56).

Aspects of Gagné's events of instruction provide instructional staff with a practical way to plan a webcast. Host moderators and guests do need to gain students' attention and inform students of the learning objectives for a webcast. Some recall of prerequisite learning occurs in a webcast, but it is not always essential. The webcasts present new material, but the purpose is not to introduce a new task or skill, so the assessment is focused less on the correct acquisition of a measurable outcome than it is on the enhancement of students' global abilities, such as communication and problem solving, which instructors assess subjectively.

A nearly ubiquitous model of directed instruction is Madeline Hunter's seven steps:

1. Objectives
2. Set [hook]
3. Standards/expectations
4. Teaching
    a. Input
    b. Modeling/demo
    c. Direction giving
    d. Checking for understanding
5. Guided Practice
6. Closure
7. Independent Practice (Allen, 1998).

Like Gagné's nine events of instruction, Hunter's seven steps are a proven model for directed instruction, but the model does not serve the kind of instruction that the webcasts+chat offer, with multiple foci of attention among distributed actors.

Principles of Learning & their Relationship to the Verge

THEORIST(S)	PRINCIPLE	RELATIONSHIP TO THE VERGE
Vygotsky	ZPD (zones of proximal development)	Actors in webcasts+chat (w+c) exhibit varying abilities to express their thoughts in text with the speed required for chat; moderators in the verge need be mindful of how students in the verge (and often the moderators themselves) need a person of higher ability to challenge them and help them develop the ability to re-converge and interact.
Rogers	significant learning	Actors in w+c often diverge to explore ideas and collaborate outside the ongoing webcast+chat; moderators in the verge must recognize when divergent discussion indicates significant learning and suggest to students that they incorporate the divergent discussion into the ongoing discussion.
Star & Griesemer Wenger	COPs (communities of practice)	Actors in w+c come from different schools on campus, so represent a multiplicity of perspectives; moderators should encourage the sharing of multiple perspectives in reaction to the webcast in order to facilitate the development of community among students .
Langer	mindfulness	Moderators in w+c expect students to respond quickly to often challenging concepts that host moderators and guests offer; mindfulness would help moderators frame questions in the language of conditionality and respect the variability of answers (and other reactions) among students.
Snow	adaptive teaching	Actors in a w+c represent an array of different learning styles and cognitive abilities; moderators must recognize that such differences exist among learners and that differences in aptitudes are subject to change when moderators adapt their language and/or strategies.
Gagné	events of instruction	Actors in a w+c are not engaged in the task-specific or skills-based learning that Gagné's events of instruction best guide; moderators must help facilitate the development of effective global abilities among students rather than of correct task skills.
Hunter	7 steps	Actors in a w+c are engaged in a dynamic environment with multiple foci of attention that Hunter's model of directed instructions would not serve; modeling of behaviors in w+c are reciprocal among moderators and students.

Table 5.2: Comparing a selection of principles of learning as they relate to the concept of the verge.

If instructional staff wish to make every webcast+chat an optimal learning experience for the students, then staff need to be explicit about how the webcasts+chat generally, and how each webcast+chat specifically, fit into explicit instructional strategies for the course. To that end, staff must express the learning objective(s) for webcasts+ chat to the students and incorporate the learning objectives into a plan, strategy, template, or checklist for webcasts+chat that succeeding semesters of instructors can use. In developing and executing a plan for webcasts+chat, staff would do well to adhere to Beaudin's techniques for keeping online learners on topic during a discussion. Beaudin developed his techniques for asynchronous discussions, but they apply equally well to synchronous discussion if the designers of the instruction will be mindful of the temporal differences between the two modes of discourse. In the synchronous discussions of the webcasts+chat, little time exists in the moment to provide guidelines or discussion summaries unless designers provide for them in the planning and make them explicit to moderators. From Beaudin's study, the top four techniques for keeping an online discussion on topic are

1. Carefully design questions that specifically elicit on-topic discussion.
2. Provide guidelines to help online learners prepare on-topic responses.
3. Reword the original question when responses are going in the wrong direction.
4. Provide discussion summary on a regular basis (as presented in Romiszowski & Mason, 2004, p. 410).

Moderators in the webcasts+chat already follow all of these techniques, but they do not follow them consistently, nor have they ever seen them expressed as a list or strategy. By integrating them into a plan for webcasts+chat and discussing them as a strategy, moderators can effect optimal webcasts+chat throughout the semester, regardless of the guest.

Instructors should also consider Willis's (1995) Constructivist-Interpretivist Instructional Design Model (as presented in Tam, 2000, p. 55), which has the following characteristics:

1. The design process is recursive, non-linear, and sometimes chaotic.
2. Planning is organic, developmental, reflective, and collaborative.
3. Objectives emerge from design and development work.
4. General instructional design experts do not exist.
5. Instruction emphasizes learning in meaningful contexts (the goal is personal understanding within meaningful contexts).
6. Formative evaluation is critical.
7. Subjective data may be the most valuable.

In devising his design model, Willis incorporated views from a constructivist approach to teaching and learning, which include the following:

- objects and events have no meaning apart from the meanings individuals construct based on their interpretations of experiences and on their beliefs;
- the instructional design provides a rich context within which individuals can negotiate meaning, allowing ways of understanding to emerge and evolve;
- the instructional design avoids breaking down context into component parts, preferring environments in which knowledge, skills, and complexity exist naturally;
- constructivist designers allow the instructional context to govern the instructional goals, which evolve as learning progresses (Tam, pp. 54-55).

Based on the preceding techniques and characteristics, I offer a template (see Figure 5.1) as just one example of how to help instructors plan for and execute optimal webcasts+chat.

Sample Template for Designing a Webcast+Chat

Webcast+chat Planning Guide for Webcast #1: Getting Started

Course Objectives Related to Webcasts+chat

- Students will communicate with each other and with their instructors using a variety of Internet tools, such as blogs, chat, instant messaging, and streaming media.
- Students will discuss cultural and social issues related to information in cyberspace.

Instructional Objectives Related to this Webcast+chat

- Students will successfully enter their section chat rooms, display their full names, and interact with each other and with their instructors about matters related to getting started in the course.
- Students will interact with the hosts of the webcast by answering the hosts' questions, by posing questions related to the course orientation or to beginning XHTML design to the hosts and to each other in the chat rooms, and by offering the hosts and fellow students solutions to problems the hosts or fellow students pose in the webcast+chat.

Considerations before the webcast+chat

1. What shall students have read or completed before they participate in the webcast+chat?
    a. Students shall have completed the orientation module (see the orientation quiz grade.)
    b. Students shall have read sections 16-22 of Module 1 related to XHTML design and begun work on their initial Web pages.
2. What pre-webcast activities will students read or complete before they participate in the webcast+chat?
    a. Students will read the Description of What to Expect Upon Viewing the Webcast, which Amari will post to the course home page three days prior to the webcast.
    b. Students will post to Twitter at least one question related either to the course orientation or to the XHTML assignment in Module 1.

Considerations for moderators during the webcast+chat

1. Host moderators only will initiate questions and pose problems for students' consideration. Among them will be the following, subject to the evolving nature of the discussion in the chat rooms:
    a. What parts of the orientation module did you find particularly problematic when you worked on it?
    b. Suppose you have been working on getting your initial Web page to display in a browser, but you just cannot get it to display. What do you do?
2. Chat moderators may reword original questions or problems the host moderators pose, or reword or clarify questions or problems students pose.
3. Chat moderators may suggest, based on their observations of students' interactions in the chat rooms, that host moderators pause to re-converge and summarize the discussion.
4. Chat moderators should focus on minding the verge, assisting students in whatever ways necessary to maintain their engagement with the ongoing discussion in the webcast+chat.

Considerations for evaluating the webcast+chat

1. Students will post responses to the following questions in their post-webcast reflections:
    a. In what way(s), if any, did the webcast+chat differ from the expectations you had prior to it?
    b. How could instructors have made the webcast+chat more effective or meaningful?
2. Staff will devote time in the staff meeting to discuss the following questions:
    a. In what way(s), if any, did the webcast+chat differ from the expectations staff had prior to it?
    b. How can staff make the webcast+chat more effective or meaningful?
    c. What questions/concerns do chat moderators have for how they manage the webcast+chat generally or specific incidents in the webcast+chat?

Figure 5.1: A sample template for designing a webcast+chat.

Chapter 6: Concluding a Study of Online Interactions

I conclude with some even broader implications of the study and an invitation to conduct further studies. As I moved into the final phase of theory construction, elements of the study that emerged made me mindful of some large-theory considerations for myself or for someone else who might wish to pursue further study of webcasts+chat as they occur in the course or elsewhere, or of other instances of mixed-media environments.

Part of the inspiration for this study were conversations I had with senior course instructors when I first became involved with the course. References to the webcasts and the extent of their efficacy as a learning environment always seemed to use the word "chaos" or "chaotic." My interest lay in ferreting out the dividend in the disorder. That interest, and the relative facility and willingness with which students and staff thrived in the micro-dynamic, multi-task-oriented roller coaster ride of a webcast+chat, led me to Katherine Hayles' (2007) theory of deep and hyper attention as different cognitive modes and further back to her essay (1989) on chaos as "orderly disorder," both of which have implications for the way staff structure webcasts+chat.

In *Chaos as Orderly Disorder: Shifting Ground in Contemporary Literature and Science* (1986), Hayles postulates that a cultural recognition that order arises from chaos, as opposed to the notion that order degrades into chaos, has become apparent in works as diverse as Claude Shannon (the "father" of information theory), physicist Mitchell Feigenbaum, philosopher Michel Foucault, and novelist Doris Lessing. Central to this recognition is the importance of scale, that what may seem chaotic on one level reveals order a different level. The chaos of the webcasts+chat that inspired this study has resulted upon a closer examination to reveal patterns of behavior that define an order in

the chaos. How can research reveal a way to help newcomers to chaotic mixed-media environments focus on the order within the chaos before the chaos generates too much anxiety?

In *Hyper and Deep Attention: The Generational Divide in Cognitive Modes* (2007), Hayles suggests that a generational shift in cognitive styles, seen in the contrast between deep attention and hyper attention, poses challenges to education at all levels:

> Deep attention, the cognitive style traditionally associated with the humanities, is characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times. Hyper attention is characterized by switching focus rapidly among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom. The contrast in the two cognitive modes may be captured in an image: picture a college sophomore, deep in *Pride and Prejudice*, with her legs draped over an easy chair, oblivious to her ten-year-old brother sitting in front of a console, jamming on a joystick while he plays *Grand Theft Auto*. Each cognitive mode has advantages and limitations. Deep attention is superb for solving complex problems represented in a single medium, but it comes at the price of environmental alertness and flexibility of response. Hyper attention excels at negotiating rapidly changing environments in which multiple foci compete for attention; its disadvantage is impatience with focusing for long periods on a noninteractive object such as a Victorian novel or complicated math problem (pp. 187-188).

From descriptions of the webcasts+chat outlined throughout this study, it is apparent that that actors within them operate in a hyper-attentive state. Hayles suggests that educators design lessons that enhance students' capacity for deep attention by starting with hyper attention. Perhaps activities in the webcasts+chat should have as their objective enhancing students' abilities to focus on reading more text and attending to long, detailed tasks in the course modules and, by extension, in other aspects of their school and everyday lives.

Some pursuit of how Goffman's theory of framing (1974) applies in a "virtual" mixed-media environment may have implications for webcasts+chat, as well. Interesting

acts of framing and reframing occur quickly in the webcasts+chat and often go unnoticed. A careful study might reveal some insights that reframe "framing" in computer-mediated interactions. How, for example, does the lack of affective cues affect identity and framing in the webcasts+chat? Do emoticons suffice for absent affective cues? How does our adoption of the word "chat" frame the conversations in the webcasts+chat? Millie used the term "robotic environment" to refer to the webcast when she guest moderated, wondering if students would respond differently to her in the webcast+chat than they did in the physical classrooms she visited. One might wonder if her framing the environment with those words changed her.

SUGGESTING FUTURE RESEARCH

In her interview, Millie said about students who carry on side conversations during her webcast that it did not bother her, that those conversations were as important as what she was saying. She followed with a quick story about a teacher she had read: "You know, you're seeing a lot more of this going on in actual classrooms, too, um, especially in lecture type courses, where faculty are opening up some sort of back channel in the course…" and then gave the example of university professor who used Twitter to have back-channel questions display on the screen behind her in a lecture hall so she could stop occasionally and address them. In this way, the professor was combining deep attention and hyper attention within a single learning environment. Millie did not say, of course, how effective the professor's practice is. Instructors in the summer 2009 section of the course I studied are using Twitter for the first time to allow students to reflect on specific aspects of the course. Research could explore the effects of introducing new media devices and methods into the existing course, or of combining new media devices and methods with traditional methods to foster some balance between deep and hyper attention.

Future studies could examine the affective states of participants in the webcasts+chat and the use of affective devices, such as emoticons and abbreviations, for showing affective states. Ten percent of the codes I produced for this study were affective devices, which I did not include in this analysis. I am curious, for example, how the use of laughter and smiling, as depicted in text [lol; *giggle*] or in emoticons [:-) ; ^_^] conveys more meaning than recipients know how to interpret from the symbol. In my study, I interpreted smiles and laughter as often buffering states of anxiety in the senders. This use of symbols to buffer one's emotional state in computer-mediated text is no different from someone's letting go nervous laughter to deny her fear or anxiety in physical co-presence, but the use of affective symbols in the webcasts+chat warrants further study.

Some consideration of webcasts+chat in other contexts, outside the course I studied, might add theoretical weight to the findings here. Instructors for the course studied, as well as for other courses, might conduct quasi-experimental studies to measure the effects of different formats for the webcasts+chat. My first approach to the problem of the webcasts+chat was to suggest a quasi-experimental 2X2 study, whereby I would study the effects of changes in the off-task behavior based on changes in pedagogic methods and alternative means for viewing the webcasts and communicating in real time (see Illustration 6.1). At the time, I was focused on minimizing off-task behaviors. Even in this early proposal for research, measuring behaviors in the webcasts+chat as on or off task was problematic. Still, the fact that four sections of the course run simultaneously during a fall or spring semester invites a study that would compare them given changes in identifiable and measurable variables.

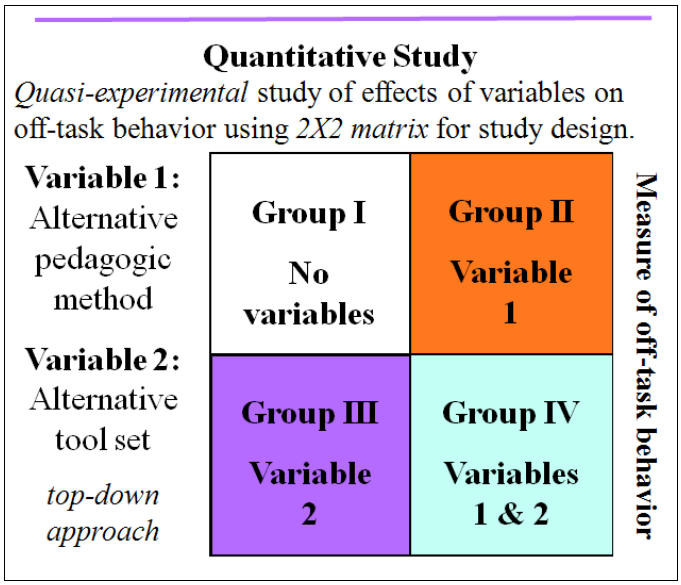

Illustration 6.1: Depicting a 2X2 quasi-experimental study of the effects of varying pedagogic methods and media tools on off-task behavior in webcasts+chat.

One area of interest for me, which I did not pursue in this study, were the effects of participants' local, physical environments on their actions in the webcasts+chat. Since cognition is subject to variables in our affective states as well as in our readiness to learn, where a person chooses to situate himself physically before participating in a webcast+chat may have influences on his ability to attend to the webcast+chat. If a person joins from her dorm room while her dorm mates throw a party, will that affect her readiness and ability to attend? If I join from a computer in the library but I am constantly distracted by traffic in the room and outside the building, will that affect my ability to attend?

Finally, I focused on what it means to be a *moderator* in a webcast+chat. Future studies might want to answer the question, what does it mean to be a *student* in a webcast+chat?

SUMMING

One of the foundational concepts of a symbolic interactionist approach to a study of webcasts+chat is this: purposeful actors in a given social situation construct ongoing actions as they "negotiate the implications of new purposes and encounter unanticipated obstacles or novel conditions that influence their activity" (Saxton, 1993, p. 236). Moderators of webcasts+chat exist in a constant state of uncertainty and flux as they interpret their own senses of identity and the multiplicity of actions happening "around" them. Our ongoing actions in the world, including in all the social sub-worlds that we may find ourselves (such as a webcast+chat), are subjected to unanticipated new purposes, obstacles, and conditions that challenge our definitions and identities, which are dynamic and mutually constructed. Whereas we all exist in a world of uncertainty and flux, moderators find themselves in a small part of that world in brief instances of accelerated flux, during which they are charged with managing uncertainty for themselves and decreasing it for their students. This study provides moderators with some insights into their actions in that small part of the world and some concepts with which they can explore how to mind that small part of the world effectively.

Three insights into moderators' actions that emerged from the study and resonated the most with moderators during member checking relate to power, humor, and structure. Moderators who divest themselves of power and invest students with power generally effect webcasts+chat in which students attend more than diverge and from which students gain knowledge that they find personally useful. Moderators who avoid the use of humor in the text-based environment of chat and rely instead on constant engagement of students effect webcasts+chat with minimal divergence. Finally, moderators who recognize that the way they structure a webcast+chat influences to a large degree the way students interact in them effect webcasts+chat that guide students quickly to attending

and maintain them there for the greatest amount of time and with the least diverging. Structure relates directly to the concepts with which moderators may design and execute webcasts+chat that participants are likely to deem worthwhile.

Concepts that emerged from the study and provided a language of webcasts+chat for moderators to use include three tiers of analytic categories and the primary theoretical concept, minding the verge. Moderators may talk about minding the verge as it relates to three interaction categories: webcasts, chats, and webcasts+chat. Moderators may also talk about minding the verge as it relates to three condition categories: converging, attending, and diverging. Finally, moderators may talk about minding the verge as it relates to six moderating categories: bonding, orientating, guiding, attending, validating, and branching. Moderators may use the conceptual language of webcasts+chat in order to familiarize new staff with the webcast+chat environment and with the roles and expectations of moderators in that environment. Ultimately, moderators may use the conceptual language of the webcast+chat to discuss ways to minimize the verge and maximize the webcast+chat. Given the dizzying task of minding the verge, instructors should make every effort to provide themselves and other moderators with advantages for managing the tasks involved in minding the verge. One way to provide moderators with advantages for minding the verge includes understanding how webcasts+chat operate within certain established principles, theories, and practices of learning and remaining mindful of those principles, theories, and practices in planning webcasts+chat.

Webcasts+chat represent one method of mixing media to bring real-time social interaction into an online learning environment. The concepts that emerged from this study reinforce the need for instructional staff to structure and execute instances of webcasts+chat that enable students to drive an open-ended dialogue with moderators and guests, and among each other. By empowering students through fostered digital sociality,

online learning can be significant learning, the kind of learning in which students refine knowledge that is important to them, the kind of knowledge that makes a difference beyond the immediate objectives of the lesson, or of the course.

Appendix A:
Webcast Instructions from the Course Home Page

Webcast Three Tonight!

Tue, 10/07/2008 - 01:24

It's time for our third webcast! Join us today, Tuesday, October 7th at 7:00 pm.

The Webcasts allow you to engage your instructors, each other, and special guests in a community forum, where ideas can be shared. The Webcast includes two parts - a live video feed from the iStudio and a real-time interactive chat in Jabber. Today's Webcast will give you a chance to meet your instructors and some of your classmates, ask questions about the course, and help guide the way future Webcasts will operate. The idea is to have fun while learning more about the course and about each other.

Remember, to participate in the Webcast, you must have either Realplayer or Quicktime downloaded on your computer to view the video. You also must have a Jabber account established with a Jabber client such as Adium or Pidgin so that you can participate in the chat.

If you have not yet downloaded a player, please go **here** to see the instructions for doing so.

If you have not set up your Jabber account and / or a Jabber client for the webcast, please go to section **Using the Jabber Server** for instructions.

Joining the chat rooms

Once you have set up a Jabber client (Pidgin or Adium), you'll be able to join the Webcast chat rooms. You may join the chat rooms up to 15 minutes ahead of the Webcast so you can have some time to practice with the program and chat with classmates.

- To join the chat rooms using Pidgin

    1. Use the Buddies tab on the Buddy List menu and click "Join a Chat", or just hit Crl+C.

    2. In the field labeled "Room:" type "webcast_3_[your instructor's first name]" (For example, webcast_3_bob).

    3. Fill in your full name beside "Local alias:" so we can see who you are when you talk in the chat.

    4. Click "Join" and a new tab will open with the conference room for your instructor.

- To join the chat rooms using Adium

    1. Click on File then "Join Group Chat" and enter "webcast_3_[your instructor's first name]"
    (For example, webcast_3_bob) in the field labeled "Chat Room Name."

    2. Fill in your full name beside "handle" so we can see who you are when you talk in the chat.

3. When you go to File/Join Group Chat, make sure that the server field in the "Join Chat" window is set to: conference.cyberspace

- **If you experience technical problems at any time during the Webcast,** please join the Tech Support room and ask for help there. To join the technical support chat room, follow the same steps that you did to join your class chat room, except substitute "tech_support" for "webcast_2_[your instructor's first name]" for the room name.

Webcast Etiquette

- When you join a chat room, please fill in the blank called "alias" or "handle" with your full name. This is very important for us to be able to identify you during our exchanges.

- Please keep your chat conversation on topic once the video has started streaming. This can be achieved by paying attention to the guest speaker and responding with pertinent questions and comments.

- During the Webcast, please only IM your instructors or TAs directly if you have a personal emergency. If you have assignment questions, please email those. If you have technical problems, please join the technical support chat room.

Join early for casual classmate chat

We'll open up the chat rooms around 6:45 P.M. for those of you who want to chat a bit before the Webcast begins at 7:00. Feel free to enter the chat rooms and talk with your classmates about the course, **the new decorations**, or whatever, until the Webcast starts. The Webcast will get started around 7:00 P.M. and run for forty-five minutes to an hour.

Please remember these three points about chat in our Jabber chat rooms:

- As many as thirty or more students may be involved in a single chat room, so please be patient with us.

- Your presence is known and logged as soon as you enter the chat room, and we keep a transcript of the conversation for reference, so be prudent.

- Students in our chat rooms have varying degrees of comfort and experience with the technology, so be polite, and help out your fellow students when you can.

When you're ready to view the Webcast video

The video part of the Webcast will be broadcast in both Quicktime and RealPlayer. Your choice of which to use is strictly up to you.

To connect to the broadcast with Quicktime:

1. **Download Quicktime** if you do not already have it, and install it. (Quicktime comes with iTunes; so if you have iTunes, you already have it.)

2. Launch Quicktime.

3. Go to File > > Open URL

4. Copy and paste this url into the dialogue box:
   rtsp://cougar.ischool.xxxxxx.edu/webcast.sdp

To connect with Real Player:

1. **Download RealPlayer** if you do not already have it, and install it.
2. Click on either of these links, and RealPlayer will open automatically:
   - **http://cobra.ischool.xxxxxx.edu:8080/ramgen/broadcast/webcast.rm**
   - **http://realaudio.cc.xxxxxx.edu:8080/ramgen/broadcast/ischool/webcast.rm**

If you cannot attend the Webcast, please complete the **alternate assignment** by 6:00 P.M. on Wednesday, October 15.

Appendix B: Consent Form

Title: **Investigating User Interactions in Webcasts + Chat** IRB PROTOCOL # 2008-01-0120
Conducted By: **Don Hamerly, Doctoral Candidate**
Of The University of Texas at Austin: **School of Information | SZB 564** Telephone: **512-426-0433**
Sponsored By: **Dr. Barbara Immroth, Faculty**
Of The University of Texas at Austin: **School of Information | SZB 564** Telephone: **512-471-3875**

I (Don Hamerly) would like to include you in my research study of webcasts + chat. This message provides you with information about the study. I'm happy to answer any of your questions about the study. Please read the information below and ask questions about anything you do not understand before deciding whether or not to take part. Your participation is entirely voluntary, and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled. You can stop your participation at any time by simply telling me. A key benefit of your participation is to provide the researcher with more complete information to better understand the phenomena under study.

The purpose of this study is to understand students' experiences when participating in synchronous, or real-time, online discussions, particularly the webcasts and chats. Primarily, I will use transcripts of the chats as data. The goal of the study is to identify and document interactions among students and moderators as they work to achieve a satisfactory webcast experience. In addition, I will use transcripts from interviews with students and instructors as data.

If you agree to be in this study, I will ask you to participate in an interview with me on a date and at a location that we agree upon.

The total estimated time to participate in the study is about thirty (30) minutes.

The risk associated with this study is no greater than that of everyday life.

You will receive no benefits or compensation for participation in this study.

The records of this study will be stored securely and kept private. Authorized persons from The University of Texas at Austin and members of the Institutional Review Board have the legal right to review the research records and will protect the confidentiality of those records to the extent permitted by law. All publications will exclude or actively conceal any information that makes it possible to identify you as a participant.

Contacts and Questions:
If you have any questions about the study please ask the researcher now. If you have questions later or want additional information, email or phone the researcher or faculty sponsor or faculty supervisor:

- Lead Investigator: Don Hamerly | hamerly@ischool.utexas.edu | 512.426.0433
- Faculty Sponsor: Barbara Immroth, Ph.D., Professor, School of Information | immroth@ischool.utexas.edu | 512.471.3875
- Faculty Supervisor: Mary Lynn Rice-Lively, Ph.D., Associate Dean, School of Information | marylynn@ischool.utexas.edu | 512.471.2371

If you have questions about your rights as a research participant, please contact Jody Jensen, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-2685.

I have read the above information and have sufficient information to make a

decision about participating in this study. I consent to participate in the study.

Name:

Please print a copy of your email message as your copy of the Consent Form agreement to keep for your records

Appendix C: Audio Recording Consent Form

Privacy Statement and Consent Agreement for Audio Recording

I have received a thorough description of the purpose and procedures for audio recording during the course of the proposed research study. I give my consent to allow recording during participation in this study and for those records to be reviewed by persons involved in the study. I understand that all information will be kept confidential and will be reported in an anonymous fashion, and that the recordings will be erased fifteen weeks after the study has been completed. I further understand that I may withdraw this consent at any time without penalty.

_____ _____

Participant's Signature Date

_____ _____

Researcher's Signature Date

Appendix D-1: Interview Protocol

INTERVIEW NOTES FOR: _____

SAY: "Thank you for taking part in this study of how people interact in online courses. I will be recording this interview, but you can instruct me at any time to turn off the recorder, if you like. I will ask you a series of questions. You are not obligated to answer any of them, so if you wish not to answer a question, just let me know. Whether you answer or not will have no bearing on the interview as a whole. What you share with me will remain confidential. Do you have any questions before we begin?"

▪ How is the use of instant messaging and chat for i312 different from other uses with which you may be familiar?	
▪ What were your thoughts after your first webcast experience? Was it what you expected? Different?	
▪ Now think back and put that in the context of your role as moderator in a webcast. Can you recount how you thought about your role as moderator? Were you told what your role was to be?	
▪ Can you describe a typical webcast, or, perhaps, a particular one? What happens in a webcast? [This is one to probe.]	

▪ What do you do in the case of a student answering another student's question in the chat, particularly a question related to the course? Is the student attending to the webcast+chat by answering, or is the student not attending to the webcast+chat by answering?	
▪ Recall how you may have chosen not to answer a question or respond to an incident. Was this a way to manage the students' interactions? [Probe]	
▪ During long divergent threads the moderator often seemed absent. Was that purposeful? Do you recall monitoring students' divergent threads?	
▪ Were you aware of lurkers in the chat? of monopolizers? [probe]	
▪ Who has more power in a webcast, the webcasters? the moderators? The students?	
▪ What were your thoughts after the last webcast? How did the webcasts contribute to the overall experience for students in i312? Or, think of it this way: What, if anything, do you think students missed by not participating in the webcasts?	

▪ In what way(s), if any, do you feel like you contributed to the webcast?	
▪ What, if anything, did the webcasts contribute to the course overall?	
▪ Is there anything you'd like to add to what we've discussed? Anything I may have overlooked considering the focus of the study?	

Appendix D-2: Completed Interview Protocol

Jing
Interview #5
05.27.2009
61m:45s

UA; one-time guest panelist; former student

▪ How is the use of instant messaging and chat for i312 different from other uses with which you may be familiar?	chats more informal than 1-1 IM; "more fluid thinking": "start at one point, through considering different angles & possibilities of the topic at hand … give and take, where you feel less like a pupil and an instructor and more just like two people talking about this higher-level thinking concept and asking questions more freely, coming up with , you know, oftentimes , more hypothetical or rhetorical questions, um, that change the way you think about the topic rather than searching for an answer, searching for more information, and specifically about the way other people think about it. Those are what make the webcast really great, that type of unexpected discussion that can sometimes come up." breaks down barriers between students & instructors "asking, provoking, pulling, drawing information and opinions and ideas out"
▪ What were your thoughts after your first webcast experience? Was it what you expected? Different?	as a student: "was great, because I sat in my dorm room, you know, as a freshman in college, and my instructors were there on camera, you know, and it felt more like a conversation, it felt more like a great visit to a professor's office hours, that first webcast, where you're like, you feel, um, very comfortable, like it's a good atmosphere for learning about cool stuff, um, it was great because it took away the dryness that I think a lot of, the expectation that I had for these would be, which would be, like, a lecture, that was being given … because it's not like lecture. In a class with no lecture and all online content the webcast instead of being talking to or at the students, it's more talking with the students, and that was not what I had expected at all, and it was a wonderful surprise, because, like I said, these instructors, it makes it more of a, it's like a, almost a more intimate experience than any other class, because like I said you're in your apartment or in my dorm room, and we're, even though you're not, it's just on the screen, it becomes more at ease with what we're learning and the whole idea of the class. It makes it less intimidating." Remembers "where are you" question as people "were trickling in":

	"mind blowing" knowing that the instructors were in the FAC in "this weird room" and other students were in this dorm or that or in their apartments; opened the door for future webcasts to be more enjoyable as UA: remembered seeing students responding the same way she had as a student; noticed "trends," the same responses semester after semester ("easy elective," "weird schedule, hard to find classes"); can almost predict what people are going to say "humbling," reading "as a moderator" watching language use; "closer eye" to what was being said, actual responses as student, "sensory overload," paying attention to what the instructors were saying; as UA, notes that staff is getting better at restating questions, "redirecting attention" "less about interacting with other students and more about making sure I had enough responses to get my participation points, because that becomes a priority. There's so much going on, so much to be paying attention to, so much to be synthesizing, I want to make sure that I'm at least responding to the instructors to make sure … and it's kind of a fine line … it's great because the webcast provides students an opportunity to be in this virtual classroom, talk to each other, but we want primarily for them to get this learning information out of it, and most of that is being provided by the instructors or by the guest and not from the other students, so that's where *the fine line* is, how much can they respond to each other before it becomes off topic, how much as a UA, and that was my problem when I took this class as a student, is, well, what they said I can, someone says something, and I'm like, oh, me, too, and I want to talk about that, but am I gonna get in trouble for being off topic, and as a UA moderating them, it becomes how much of this should I allow? It's great that they're building off and going on these new ideas and sharing the experiences they have, but how far do you let that go before you say, ok, guys, let's focus. It's like we're asking something from them sometimes that, you know, *you can't really build a fence around it*." "It's an obstacle. It's tricky." as a student, re not communicating with other students in the chat: the format was "a little hurdle;" "more importantly, once the topics and the theme of the webcast changed from let's tell you about this course to let's talk about copyright, or let's talk about security, because I don't think this is what was going through my mind at the time, but I think I was reacting to the fact that, for the first webcast, and, to a certain degree, for the second webcast, when it was more about security – I'll never forget those webcasts – those were the ones where I didn't feel

	like I had very much to contribute, because I didn't know about the course until you guys told me about it, and I didn't know very much about security, you know, during module one and two, until we'd gotten into the meat of it, and I guess I didn't expect to be getting that much from other students, either. However, once we get into students who have experience getting letters from the government saying, you know, stop downloading files and stuff, then it really became more engaging to read what the other students were saying and to get into those conversations, because they had stories and information and experiences that I didn't have, and that wasn't coming from the instructors, so being more familiar with the topics at hand definitely increased how much I felt interested or made myself pay attention to what other students were saying. And part of that was, I took my cues also from the instructors, because when they would say, so and so, good point, tell us more about that, again, it redirects my attention to whatever, uh, the students would say, and for myself, as well, I felt more comfortable sharing more about things that I knew about, which happened in the later webcasts."
▪ Now think back and put that in the context of your role as moderator in a webcast. Can you recount how you thought about your role as moderator? Were you told what your role was to be?	a student, wasn't aware of there being a UA or GA, never used them via IM as a UA, no experience or expectations; in meetings beforehand, "they" would say, ok, you need to be in this room and help focus them if they get too distracted, especially extra support to the room of the instructor on camera and help focus things felt role was primarily to "rein 'em in when they get off topic, and, then later, be sure to address when students have really good insight, to point that out, call attention to it in the chat, because we don't want that to get away, we don't want to miss that, just like we don't want to miss them, you know, talking to their buddies about the game last night, um, so just kind of refining what I'm looking for, you know, good or bad, because, like I said, you start to see the predictable responses over and over, and, you know, I can glaze over those, tune'em out, and try and find the most salient, good or bad, uh, participation and deal with that." looking for "the outliers" among the chatter; when it becomes a pattern, and very "textbook responses" in the student chat, wants be over in the staff chat, goofing around, commenting; or filtering questions and students' unique points of view, a "best of" for the webcast as a guest: "Drew said I want someone who is more on their level. I don't want this to be in technical terms. There have been some webcasts that just, you know, it feels like a different language, and you can see it in the students, and you can see it in, you know, the questions that they're not asking, because you know they don't even understand enough to ask questions, so that was, the hour or two between when

	Drew asked me to be on the webcast and when it happened, that was what I just kept, you know, in the forefront of my mind, was, I really hoped that whatever we're talking about, I hope the students understand enough that they can keep asking questions and keep having insight, and not be, I don't want to be redundant." wasn't as aware of what was going on in the chat room as usual; so much harder to be thinking and talking and also reading and also chat stuff: "I mean, talk about sensory overload."
▪ Can you describe a typical webcast, or, perhaps, a particular one? What happens in a webcast? [This is one to probe.]	general goal of webcast: educate, inform students with supplemental information about the module, or specialized information, making it relevant and "intellectually digestible" helps instructors know what's "sticking" - it's a "progress check" – helps students "touch base" and "stay on track" with the modules – kind of a "pressure valve" in case something's really going wrong: students can talk to each other and the instructors about problems they're having, ask questions about the course; helps focus their time and attention for the course
▪ What do you do in the case of a student answering another student's question in the chat, particularly a question related to the course? Is the student attending to the webcast+chat by answering, or is the student not attending to the webcast+chat by answering?	if student answers another student's question accurately, "the perfect situation" absolutely attending, focusing, being engaged in the chat and the goals of the webcast as moderator, needs to be more "plugged in" to students answering other students' questions just for the sake of participating, getting participation grade, because the webcast shouldn't be an "avenue for misinformation" when a student (or instructor) addresses someone by name in the chat, that draws her attention as a moderator; wants to be aware of what others are paying attention to: "If someone else is paying attention to it, then I need to be paying attention to it, too."
▪ departure	notes that students' comments that seem addressed to no one in particular may be from students who have logged into the chat, gone off to make dinner, come back and scrolled up to interject something
▪ Recall how you may have chosen not to answer a question or respond to an incident. Was this a way to manage the students' interactions? [Probe]	yes, part of the decision making process: is this going to escalate? will choose not intervene; does not want to be perceived as the mean one, the hard ass wait it out and see; a lot of times I choose not to say or do anything; leave it to the AI or GA, unless AI is hosting webcast, then takes on more responsibility; has "pretty good sense of when to say something or

	not" or when to contact student privately via IM (done maybe once, because of offensive, sexist comments) because of the tension of having to deal with peers, sometimes older peers, Jing shut down her Facebook account to friends only asking students to refocus is "a gut response"
▪ During long divergent threads the moderator often seemed absent. Was that purposeful? Do you recall monitoring students' divergent threads?	"times when I could have done better" – relies on other moderators; when good guest, webcast "goes into autopilot" "having the moderators absent makes students feel more like it is their webcast" wouldn't be absent if anything was damaging or making the webcast less effective for the students: "As long as I see the text moving, and it seems to be related to the topic, even loosely, to me that's the sign of a successful webcast." "What's not good is to see it stay there and be dead, and you're just like, what are students doing, because they're obviously not contributing, what are they thinking, what are they not understanding?"
▪ Were you aware of lurkers in the chat? of monopolizers? [probe]	lurkers: grading thing; not her problem monopolizers: "I don't generally see that as a bad thing, because I think that some students are provoked by that, they see, I mean, it sets a good example. If every student provoked, or monopolized the conversation, that would be the best webcast ever … especially if it were on topic. And if it weren't, then we would just say, hey, guys, focus. And they'll keep talking, because those chatty chatters are the ones that really, I mean, they make the webcasts what they are and make them, uh, involving."
▪ Who has more power in a webcast, the webcasters? the moderators? The students?	guests: creating questions, demanding that everyone listen and respond, that moderators repost questions ("Very little of what I contribute is original to myself.") only rival to guests are disruptive students, because "everyone has to snap back attention to that, deal with that, now let's get back to learning" guests manipulate the topic, flow of the conversation, define how "good" the webcast will be; admits subjective nature of "good" but says she can list the best webcasts, knows what they are, and usually because of the guest; not because of great questions from the host or great insights from the students (although there have been some); best ones with the best guests; worst ones with the most confusing guests matter of whether it's effective

▪ What were your thoughts after the last webcast? How did the webcasts contribute to the overall experience for students in i312? Or, think of it this way: What, if anything, do you think students missed by not participating in the webcasts?	after last webcast, always gets the sense that there's one more (because there's one more module), so never gets the "sense of finality" makes class "tangible" (from her experiences with several other online courses at a university (2) and at community college (5 or 6)) webcasts make the class "real" – you get fun – they make you care more about how your instructors see you as a student; gave face and personality to instructors; made their grading have "more validity," because there was someone to answer to; grades not just given to them, not just information on a screen, knew the people who were creating it, who obviously cared about the class, cared that students were learning; experts made class more authentic: class was up to date ("Internet 101"); gives class trustworthiness (stuff re libraries from a librarian; stuff re security from an ex-CIA agent)
▪ In what way(s), if any, do you feel like you contributed to the webcast?	
▪ What, if anything, did the webcasts contribute to the course overall?	"It's the most applicable part of the whole class. It's the most real life … more closely related to the students, because we're asking them questions in a way that we don't really ask them any other place, um, it's pulling it out of them and making them think about it. Instead of just absorbing information, they're spitting some back out at us, and that's, the webcast is really the main place where we can get that."
▪ Is there anything you'd like to add to what we've discussed? Anything I may have overlooked considering the focus of the study?	

Appendix E: Code Book After Initial Coding

affective responses, emoticons
frowning
giving a thumbs up
showing ambivalence or uneasiness
smiling
sticking tongue out
unidentified
showing disappointment
kissing
winking
showing one's heart
expressing annoyance
expressing consternation

affective responses, text
booing
making a yummy noise
laughing
using excessive/unusual punctuation
whistling
whooping
crying
showing fear
waving

technical support
acknowledging technical status
blaming technology
cheering a student
cheering onesself
clarifying tech support
feeding back technical status
flaming someone's tech skills
offering reassurance
offering unsolicited technical help
reacting negatively to flaming
receiving technical help
seeking technical help
sharing technical solution/explanation
supporting a technical solution
thanking/acknowledging classmate(s) for technical support
using humor

module-related interactions - students
asking generally about module work
responding generally about module work
asking specifically about module work

non-task interactions - moderators
affirming directly a student's comment/question
greeting co-moderator(s)
greeting student(s) by name
greeting the class
saying good-bye to the class
sharing with co-moderator
thanking students for coming
apologizing
extending a non-task thread

non-task interactions - students
acknowledging a moderator's help/comment/answer
acknowledging a classmate's help/comment/answer
answering directly a classmate's question
asking about details in video
asking which person on screen is instructor
commenting neutrally on webcast experience
commenting negatively on webcast experience
commenting positively on webcast experience
commenting on state of personal computer
complimenting a classmate
expressing relief
flaming
greeting a moderator
greeting the chatroom
noting interest
reacting to moderator's redirection
responding to a classmate's salutation
responding to details in the chat
responding to details in video
saying good-bye to the chatroom
seeking/discovering classmate identities/locations
suggesting a meeting
thanking
correcting a typo
claiming one's chat room, instructor the best
flirting
suggesting a prank

task-related interactions
asking a clarifying question
asking an orienting question
commenting on difficulties of joining chat
expressing concern, non-tech
expressing concern, tech related
extending a classmate comment
laughing at a classmate's comment
calling for questions (moderator)

non-task-related webcast interactions
asking a webcast host/guest to do something
asking moderator to do something
joking/being sarcastic
reacting to a classmate's non-task request/comment
reacting to a student's non-task request
commenting on webcast host/guest appearance

task-related webcast interactions
acknowledging a classmate's question/comment/answer
acknowledging a moderator's answer
acknowledging a point made in the webcast
answering fellow student question(s)
answering student question(s)
asking a question about the webcast
asking a question of the webcast host/guest
connecting personally to discussion point
extending an answer/offering unsolicited information

instructing (moderator)
instructing (student)
justifying one's behavior
raising hand
redirecting student behavior
responding directly to webcast question/comment
responding to direction/question from moderator
thanking the webcast host(s)/guest(s)
using humor to buffer
explaining one's reasoning for asking a question

webcast host/guest interactions
engaging a guest or co-host
explaining/expressing expectations
giving directions
identifying onesself with physical gesture
justifying nature of the webcast
making positive comments to students
reacting to co-host/guest comment or question
responding to moderator comment(s)
responding to student comment(s)/questions(s)
sharing personal information
using humor in a webcast

tangential interactions
answering tangential question
asking tangential question prompted by discussion
discussing non sequitur
discussing tangential comment
discussing tangential topic
offering non sequitur
offering tangential comment prompted by discussion
reacting to non sequitur
reacting to tangential comment
seeking answer outside webcast discussion
extending a tangential thread

actions that cannot be known
?

Appendix F: Code Book After Focused Coding

informal interactions
correcting a typo
farewelling
flirting
greeting
making small talk
thanking

intra-chat interactions
extending an answer/offering unsolicited information

intra-moderator
debriefing

intra-student
acknowledging/answering a classmate
acting out/justifying
discussing module work
sanctioning
joking/being sarcastic
responding to details in the chat

student-moderator interactions
acknowledging a moderator
acknowledging/answering a student
echoing webcast
instructing
reconciling
redirecting student behavior
using humor to buffer

intra-webcast interactions
host-guest interactions

tangential interactions
extending a tangential thread
initiating divergence
following a tangent

technical support
blaming technology
cheering success
feeding back technical status
offering unsolicited technical help
seeking/receiving technical help
sharing technical solution/explanation

virtual body language/reactions
booing
crying
frowning
laughing
making a yummy noise
showing approval (thumbs up/hearts)
showing disapproval
showing fear
smiling
sticking tongue out
using excessive/unusual punctuation
waving
whooping
winking

webcast-chat interactions
acknowledging a point made in the webcast
asking a clarifying question
asking a question of the webcast host/guest
asking a webcast host/guest to do something
being funny
commenting on webcast host/guest appearance
giving directions
identifying oneself with physical gesture
justifying nature of the webcast
lecturing
making positive comments to students
orienting
responding directly to webcast question/comment
responding to details in video
responding to moderator comment(s)
responding to student comment(s)/questions(s)
sharing personal information

Appendix G-1: Code Book After Theoretical Coding

AFFECTIONS
booing
crying
frowning
laughing
licking lips
making a yummy noise
showing approval (thumbs up/hearts)
showing disapproval
showing fear
smiling
sticking tongue out
using excessive/unusual punctuation
waving
whooping
winking

INTERACTING

Chat Moderator - Chat Moderator

Converging, C-C
ORIENTING

Chat Moderator - Host Moderator

Attending, C-H
ANSWERING

Converging, C-H
GREETING

Diverging, C-H
DEBRIEFING
JOKING

Chat Moderator - Student

Attending, C-S
THANKING
ANSWERING
REDIRECTING

Converging, C-S
GREETING
SMALLTALKING
ORIENTING
HELPING
CLARIFYING
CHEERING

Diverging, C-S
REACTING_TO_SARCASM
INITIATING_A_TANGENT
FOLLOWING_A_TANGENT

Chat Moderator - Students

Attending, C-Ss
INCENTIVIZING
DIRECTING
ADVISING
REDIRECTING
SANCTIONING

Converging, C-Ss
GREETING
CREATING_PRESENCE

Diverging, C-Ss
FAREWELLING

Guest - Guest

Attending, G-G
QUESTIONING
SHARING INFORMATION

Diverging, G-G
JOKING

Guest - Student

Attending, G-S
THANKING
CREATING_PRESENCE
ANSWERING
RESPONDING

Guest - Students

Attending, G-Ss

Converging, G-Ss
RECONCILING

Host Moderator - Guest

Attending, H-G

Converging, H-G

Diverging, H-G

Host Moderator - HostModerator

Attending, H-H

Diverging, H-H

Host Moderator - Student

Attending, H-S
- THANKING
- QUESTIONING
- REDIRECTING
- SANCTIONING

Converging, H-S
- CURIOSITIES
- CHEERING

Diverging, H-S
- THANKING

Host Moderator - Students

Attending, H-Ss
- REINFORCING_WEBCAST

Converging, H-Ss
- CHECKING
- GREETING
- COORDINATING
- DIRECTING
- RECONCILING

Diverging, H-Ss
- FAREWELLING
- THANKING

Student - Any/Everyone

Attending, S-A

Converging, S-A
- GREETING
- TALKING_TECH
- CLARIFYING
- CHEERING
- HELPING
- SEEKING_HELP

Diverging, S-A
- CORRECTING_A_TYPO
- FAREWELLING
- CURIOSITIES
- INITIATING_A_TANGENT
- FOLLOWING_A_TANGENT
- EXTENDING_A_TANGENT

Student - Student

Attending, S-S
- CORRECTING_A_TYPO
- THANKING/BEING_POLITE
- HELPING
- CLARIFYING
- QUALIFYING
- SANCTIONING

Converging, S-S
- THANKING
- CORRECTING_A_TYPO
- GREETING
- SMALLTALKING
- CURIOSITIES
- HELPING
- REINFORCING
- CHEERING

Diverging, S-S
- FAREWELLING
- FLIRTING
- CURIOSITIES
- FOLLOWING_A_TANGENT
- EXTENDING_A_TANGENT
- INITIATING_A_TANGENT
- CLARIFYING
- JOKING

Student - Students

Attending, S-Ss
- THANKING
- REDIRECTING
- SANCTIONING
- COMMENTING

Converging, S-Ss
- GREETING
- SMALLTALKING
- ORIENTING

Diverging, S-Ss
- CORRECTING_A_TYPO
- FAREWELLING
- CURIOSITIES
- JOKING
- FOLLOWING_A_TANGENT
- INITIATING_A_TANGENT
- JUSTIFYING

Appendix G-2: Code Book After Reduction of Codes

AFFECTIONS
booing
crying
frowning
laughing
licking lips
making a yummy noise
showing approval (thumbs up/hearts)
showing disapproval
showing fear
smiling
sticking tongue out
using excessive/unusual punctuation
waving
whooping
winking

INTERACTIONS

CHAT

Attending in chat
- THANKING
- ANSWERING
- REDIRECTING
- INCENTIVIZING
- DIRECTING
- ADVISING
- SANCTIONING

Converging in chat
- THANKING
- SELF CORRECTING
- GREETING
- SMALLTALKING
- HELPING
- REINFORCING
- CHEERING
- ORIENTING* see Comments for quotes
- TECH TALKING
- CLARIFYING
- HELP SEEKING
- CONNECTING* (Nardi) see Comments for quote

Diverging in chat
- FAREWELLING
- FLIRTING
- FOLLOWING_A_TANGENT
- EXTENDING_A_TANGENT
- INITIATING_A_TANGENT*see Comments
  - --DECLARING
  - --SUGGESTING
- CLARIFYING
- JOKING
- SELF CORRECTING
- JUSTIFYING

WEBCAST

Attending in webcast
- QUESTIONING
- ANSWERING
- COMMENTING
- SUGGESTING
- CLARIFYING
- DEBATING

Converging in webcast
- QUESTIONING
- ANSWERING
- EXPLAINING

Diverging in webcast
- SUGGESTING
- JOKING

WEBCAST+CHAT

Attending in webcast+chat
- THANKING
- QUESTIONING
- REDIRECTING
- SANCTIONING
- REINFORCING_WEBCAST

Converging in webcast+chat
- CHEERING
- CHECKING
- GREETING
- COORDINATING
- DIRECTING
- RECONCILING
- JUSTIFYING* see Comments for quote

Diverging in webcast+chat
- THANKING
- FAREWELLING
- JOKING* see Comments for example (w1-1)

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ଓ *Grounded theory* is a doctrine for those with strong religious leanings, particularly of a Protestant persuasion. Success entails a process of purification, achieved by abandoning theoretical blinkers. Only then can diligent scholars see reality as it is, only then can they see the light. This blessed state is attained through hard, conscientious toil. Only the truly industrious – those who have collected an enormous amount of data and lifted them up into various category-containers, which in turn are stacked up to create a great cathedral-like structure, on top of which sits the theory (with a small 't') – can avoid the corruption and perils of free-thinking and hedonistic theoretical laxity, which allows the ungodly to think great, free and dangerous thoughts, abandoning the straight and narrow but rightful empirical path. Grounded theory is the path for petty bourgeois Protestants, where the accumulation of data leads to modest but certain returns in the form of a limited but secure stack of cultural capital. The grounded theorist is Luther's man.

from *Reflexive Methodology: New Vistas for Qualitative Research*,
by Mats Alvesson and Kaj Sköldberg (2000), p. 239 (with levity)

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